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VHF MARINE RADIO

MR F80B



Cobra[®]

MARINE[®]

Owner's Manual

Our Thanks to you and Customer Assistance

Introduction

Thank you for purchasing a CobraMarine[®] VHF radio. Properly used, this Cobra[®] product will give you many years of reliable service.

How Your CobraMarine VHF Radio Works

This radio is a VHF transceiver for fixed mounting on your boat. It gives you 2-way vessel-to-vessel and vessel-to-shore station communications, primarily for safety and secondarily for navigation and operational purposes. With it, you can call for help, get information from other boaters, talk to dock or bridge tenders and make radiotelephone calls to anywhere in the world through a marine operator.

Besides 2-way communications, in the U.S.A., the radio can provide quick access to receive all NOAA (National Oceanographic and Atmospheric Administration), including two Canadian weather channels for alerting you to weather emergencies with a tone on a weather channel you can select for your area.

Customer Assistance

Should you encounter any problems with this product, or not understand its many features, please refer to this owner's manual. If you require further assistance after reading this manual, Cobra Electronics offers the following customer assistance services:

For Assistance in the U.S.A.

Automated Help Desk English only.
24 hours a day, seven (7) days a week 773-889-3087 (phone).

Customer Assistance Operators English and Spanish.
8:00 a.m. to 6:00 p.m. Central Time Mon. through Fri. (except holidays)
773-889-3087 (phone).

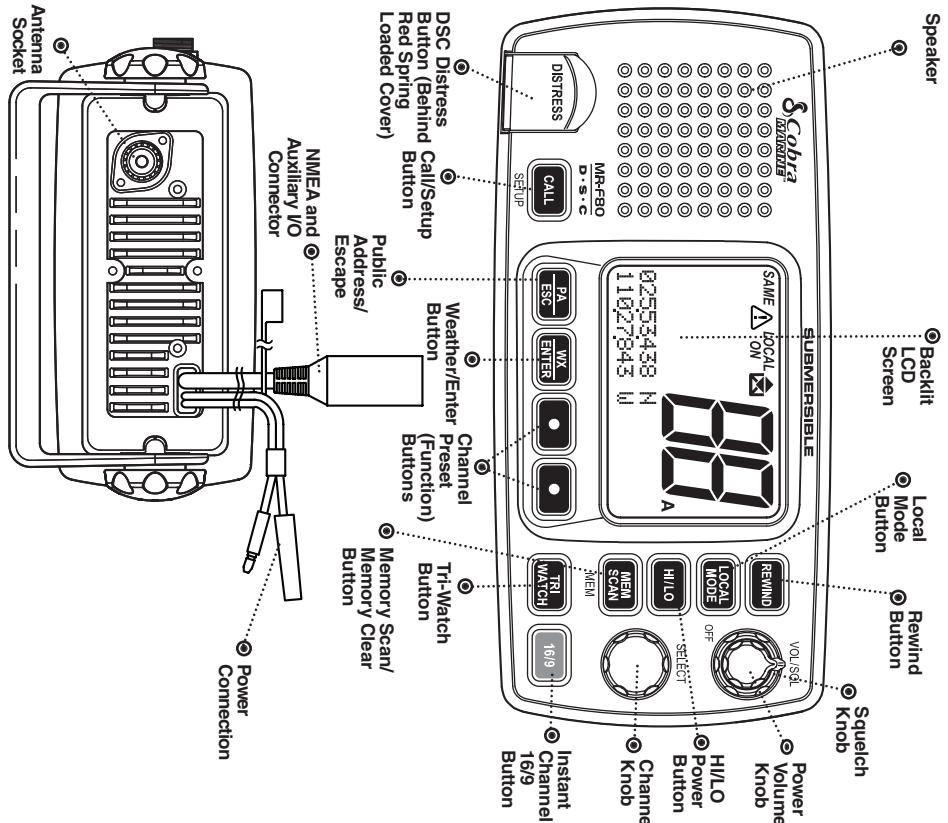
Questions English and Spanish.
Faxes can be received at 773-622-2269 (fax).

Technical Assistance English only.
www.cobra.com (online: Frequently Asked Questions).
English and Spanish: productinfo@cobra.com (e-mail).

For Assistance Outside the U.S.A.
Contact Your Local Dealer

Transceiver Controls, Indicators and Connections

Introduction



Product Features

Product Features

Dual Power H/L/O

Selectable to 1 or 25 watts output power for near or distant calling.

USA/International/Canada Channels

Allows operation on any of the three (3) different channel maps established for these areas.

All NOAA Weather Channels

Instant access to all of the National Weather Channels, 24 hours a day.

Emergency Weather Alert with SAME

Can alert you with an audible tone and visual alarm if threatening weather is nearby. The SAME alerts provide you with additional alerts for specific local areas.

Instant Channel 16/9

Instant access to the priority Channel 16 and calling Channel 9.

Digital Selective Calling (DSC)

Allows sending a distress message at the touch of a button as well as specific station-to-station calls.

Cobra Exclusive Rewind-Say-Again™

Digital Voice Recorder
A dedicated button allows user to replay up to the last 20 seconds of audio. Press the dedicated rewind button and Cobra VHF will replay the last 20 seconds of the audio from your VHF.

PA (Public Address)

Allows operator instant access to public address system by pressing button.

Memory Scan

Lets you scan through all selected memory channels to find conversations in progress.

Tri-Watch

Lets you monitor three (3) channels at once — Channel 16, Channel 9 and one (1) user selectable channel.

Noise Canceling Microphone

Blocks background noise to let your voice be heard at the receiving station.

Controls on the Microphone

Handy control buttons on the microphone/speaker let you operate one-handed at a distance from the radio.

Illuminated Buttons

Helps you quickly find the buttons you need in low light conditions.

Digital Selective Calling (DSC Class-D)

Allows the ability to maintain a listening watch on VHF Channel 16 while simultaneously monitoring Channel 70 for DSC calls. Allows sending a distress message at the touch of a button as well as specific station-to-station calls. Radio utilizes two (2) built-in encoders (receivers).

Mounting Kits (Included)

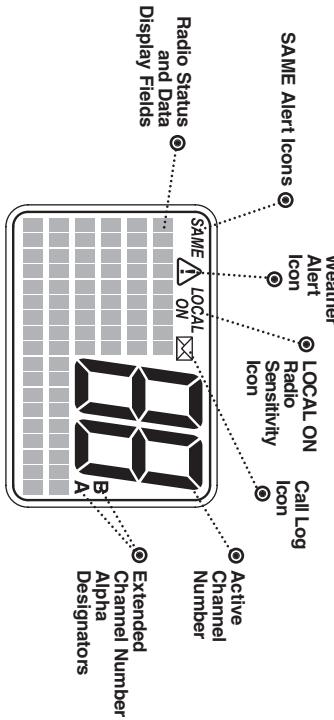
Radio can be mounted on, under or in almost any flat surface using one of the included brackets.

Microphone/Speaker and Product Features (continued)

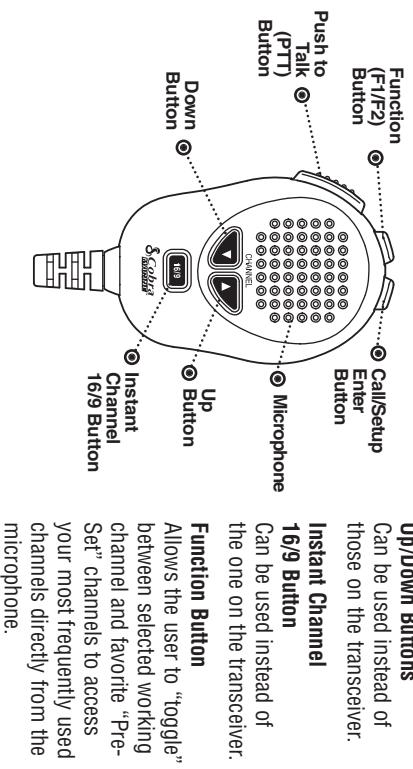
Introduction

Introduction

Backlit LCD (Liquid Crystal Display) Screen



Microphone/Speaker with Auxiliary Controls



Waterproof
Submersible to 3.28 ft (1 m) of water for 30 minutes — meets IJIS7 Standards.

Local Mode
A dedicated button that allows user to lower unnecessary noise interference from random RF noise in highly populated areas.

Distress Call Button
Allows sending a distress message at the touch of a button as well as specific station-to-station calls.

NMEA Port for GPS, Chartplotter and DSC Interfacing
The NMEA "IN" input in this radio will receive GPS position information from all GPS devices (e.g., Chartplotters, GPS sensors) sending out their position information using the standard NMEA 0183 protocol. This position information from the GPS is then sent by the MR F80 when sending out DSC emergency transmissions. This unit also has an NMEA "OUT" output. This allows the radio to send out position information received from other VHF radio units. This enables position polling and other advanced integration.

A4 English

A5 English

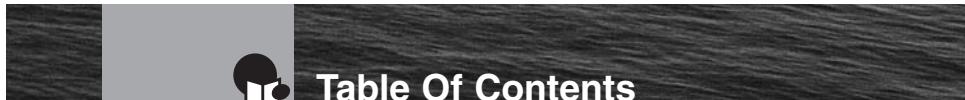


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Introduction

Important Safety Information

**Before installing and using your CobraMarine VHF radio,
please read these general precautions and warnings.**

Warning and Notice Statements

To make the most of this radio, it must be installed and used properly.

Please read the installation and operating instructions carefully before installing and using the radio. Special attention must be paid to the **WARNING** and **NOTICE** statements in this manual.



WARNING

Statements identify conditions that could result in personal injury or loss of life.



NOTICE

Statements identify conditions that could cause damage to the radio or other equipment.

Safety Training Information

This CobraMarine® radio is designed for, and classified as, "Occupational Use Only." The radio must only be used in the course of employment by individuals aware of both the hazards and the ways to minimize those hazards. This radio is NOT intended for use in an uncontrolled environment by the "General Population."

This radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only." This CobraMarine VHF radio also complies with the following guidelines and standards regarding RF energy and electromagnetic energy levels as well as evaluation of those levels for human exposure:

- FCC OET Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1-1992), IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- American National Standards Institute (C95.3-1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields — RF and Microwave.



Important Safety Information

Introduction

The following **WARNINGS** and **NOTICE** information will make you aware of RF exposure hazards and how to assure you operate the radio within the FCC RF exposure limits established for the radio.



WARNINGS

Your radio generates electromagnetic RF (radio frequency) energy when it is transmitting. To ensure that you and those around you are not exposed to excessive amounts of that energy, **DO NOT** touch the antenna when transmitting and **KEEP** yourself and all others on your vessel the required distance away from the antenna while transmitting. See page 31 in the antenna requirements section for further information.

DO NOT operate the radio without a proper antenna or equivalent dummy load attached. Doing so may expose you to excessive RF energy and will damage the radio.

DO NOT transmit more than 50% of the time the radio is in use — 50% duty cycle. The radio is transmitting when the Talk button is pressed and the transmit information shows on the LCD screen.

ALWAYS use only Cobra authorized accessories.

DO NOT operate the radio in an explosive atmosphere, near blasting sites, or in any area where signs are posted prohibiting radio transmissions.

NEVER connect the transceiver to AC power. It can be a fire hazard, may cause an electric shock and may damage the transceiver.

NEVER mount the transceiver or microphone/speaker where they might interfere with operation of your vessel or cause injury.

DO NOT allow children or anyone unfamiliar with proper procedures to operate the radio without supervision.

Failure to observe any of these warnings may cause you to exceed FCC RF exposure limits or create other dangerous conditions.



NOTE

Throughout this manual, the term "Transceiver" will be used to identify the main unit containing the LCD screen and controls. The term "Radio" will be used to identify the entire equipment including transceiver, microphone, antenna and any attached external speakers.



Recommendations for Marine Communication

Introduction

**NOTICE**

AVOID using or storing the radio at temperatures below -4°F (-20°C) or above 140°F (60°C).

NEVER connect the transceiver to DC power greater than 16 volts or to any DC source with reversed polarity. Doing so will damage the transceiver.

DO NOT cut the power cables attached to the transceiver. Improper reconnection with reversed polarity will damage the transceiver.

POSITION your radio, external speakers and cables at least 3 ft (0,9 m) away from your vessel's magnetic navigation compass. **CHECK** your compass before and after installation to be sure that it has not introduced any deviation.

DO NOT attempt to service any internal parts yourself. Have any necessary service performed by a qualified technician.

DO NOT drop the transceiver or microphone/speaker. Doing so may crack the case or damage a waterproof seal. Once these items have been dropped, the original waterproofing cannot be guaranteed.

DO NOT use chemicals or solvents such as mineral spirits and alcohol to clean your radio. They may damage the case surfaces.

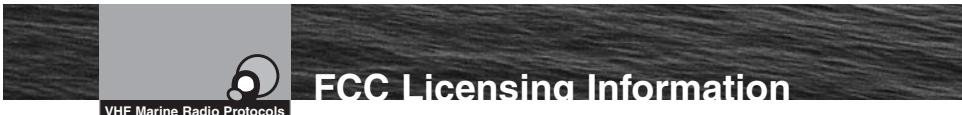
Changes or modifications to your radio **MAY VOID** its compliance with FCC (Federal Communication Commission) rules and make it illegal to use.

Recommendations for Marine Communication

The frequencies your radio uses are set aside to enhance safety afloat and for vessel navigation and operational messages over a range suitable for near-shore voyages. If the 25 watt maximum output of your radio is not sufficient for the distances you travel from the coast, consider installing a more powerful radio such as HF single-side band or satellite radio for your vessel.

The U.S. Coast Guard does not endorse cellular telephones as substitutes for marine radios. They generally cannot communicate with rescue vessels and, if you make a distress call on a cellular telephone, only the party you call will be able to hear you. Additionally, cellular telephones may have limited coverage over water and can be hard to locate. If you do not know where you are, the Coast Guard will have difficulty finding you if you are using a cellular telephone.

However, cellular telephones can have a place onboard where cellular coverage is available — to allow social conversations and keep the marine frequencies uncluttered and available for their intended use.



FCC Licensing Information

CobraMarine VHF radios comply with the FCC (Federal Communication Commission) requirements that regulate the Maritime Radio Service.

This CobraMarine radio incorporates a VHF FM transceiver designed for use in the frequency range of 156.025 to 163.275 MHz. It requires 13.8 volts DC and has a switchable RF output power of one (1) or 25 watts.

The radio is capable of Class-D DSC (Digital Selective Calling) operation.

The radio operates on all currently allocated marine channels and is switchable for use according to U.S.A., International, or Canadian regulations. It features instant access to emergency Channel 16 and calling Channel 9 as well as NOAA (National Oceanic and Atmospheric Administration) All Hazards Radio with Alert that can be accessed by pressing one key.

Station License

An FCC ship station license is no longer required for any vessel traveling in U.S.A. waters which uses a VHF marine radio, RADAR, or EPIRB (Emergency Position Indicating Radio Beacon), and which is not required to carry radio equipment. However, any vessel required to carry a marine radio on an international voyage, carrying a HF single side band radiotelephone, or carrying a marine satellite terminal must obtain a station license.

FCC license forms and applications for ship and land stations can be downloaded through the Internet at www.fcc.gov/formpage.html. Forms can also be obtained by calling the FCC at 888-225-5322.

International Station License

If your vessel will be entering the sovereign waters of a country other than the U.S.A. or Canada, you should contact that country's communications regulatory authority for licensing information.

Radio Call Sign

Currently, the FCC does not require recreational boaters to have a license. The United States Coast Guard recommends that the boat's registration number and state of registry (e.g., IL 1234 AB) be used as a call sign and be clearly visible on the vessel.

Canadian Ship Station License

You need a Radio Operator's Certificate if your vessel is operated in Canadian waters. Radio Operator training and certification is available from the Canadian Power Squadron. Visit their website (<http://www.cps-ecp.ca/english/newradiocard.html>), contact the nearest field office or write: Industry of Canada, Radio Regulatory Branch, Attn: DOSP, 300 Slater Street, Ottawa, Ontario, Canada K1A 0C8.



User Responsibility and Operating Locations

All users are responsible for observing domestic and foreign government regulations and are subject to severe penalties for violations. The VHF frequencies on your radio are reserved for marine use and require a special license to operate from land, including when your boat is on its trailer.



NOTE

This device complies with part 15 of the FCC Rules. Operation is subject to the following two (2) conditions: 1. This device may not cause harmful interference, and 2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Warnings: Replacement or substitution of transistors, regular diodes or other parts of a unique nature, with parts other than those recommended by Cobra may cause a violation of the technical regulations of part 80 of the FCC Rules, or violation of type acceptance requirements of part 2 of the rules.

VHF Marine Radio Procedures

Maintain Your Watch

Whenever your boat is underway, the radio must be turned On and be tuned to Channel 16, except when being used for messages.

Power

Try 1 watt first if the station being called is within a few miles. Try a second call after waiting two (2) minutes. If there is no answer, switch to a higher power. This will conserve your battery and minimize interference to other users by avoiding repeated calls.

Calling Coast Stations

Call a coast station on its assigned channel. You may use Channel 16 when you do not know the assigned channel.

Calling Other Vessels

Call other vessels on Channel 16 or on Channel 9. (Channel 9 is preferred for recreational vessel use.) You may also call on ship-to-ship channels when you know that the vessel is listening on a ship-to-ship channel.

Initial Calling on Channel 16 or 9

The use of Channel 16 is permitted for making initial contact (hailing) with another vessel. The limits on calling must be followed. Be reminded, Channel 16's most important function is for Emergency Messages. If, for some reason, Channel 16 is congested, the use of Channel 9, especially in U.S. waters, may be used as the initial contact (hailing) channel for non-emergency communication.



Voice Calling

Limits on Calling

You must not call the same station for more than 30 seconds at a time.

If you do not get a reply, wait at least two (2) minutes before calling again.

After three (3) calling periods, wait at least 15 minutes before calling again.

Change Channels

After contacting another station on a calling channel, change immediately to a channel which is available for the type of message you want to send.

Station Identification

Identify, in English, your station by your FCC call sign, vessel name and the state registration number, at both the beginning and at the end of the message.

Prohibited Communications

You **MUST NOT** transmit:

- False distress or emergency messages.
- Messages containing obscene, indecent or profane language.
- General calls, signals or messages (messages not addressed to a particular station) on Channel 16, except in an emergency or if you are testing your radio.
- When you are on land.

Voice Calling

To Call Another Vessel or Shore Installation (e.g. Lock or Bridge Tender):

- Make sure your radio is On.
- Select Channel 16 and listen to make sure it is not being used.



NOTE

Channel 9 may be used by recreational vessels for general-purpose calling. This frequency should be used whenever possible to relieve congestion on Channel 16.

- When the channel is quiet, press the **Talk** button and call the vessel you wish to call. (Hold the microphone/speaker a few inches from your face and speak directly into it in a normal tone of voice — clearly and distinctly.) Say “[name of station being called] THIS IS [your vessel's name or call sign].”
- Once contact is made on the calling channel, you must switch to a proper working channel. See the channel listing on page 14 through 15.



Digital Selective Calling (DSC)

For Example

The vessel Corsair calling the vessel Vagabond:

Corsair: "Vagabond, this is Corsair (station license number call sign)."

Vagabond: "Corsair, this is Vagabond. Over."

Corsair: "Vagabond go to working Channel 68. Over."

Both parties switch over to the agreed upon working channel....

Corsair: "Vagabond I need to talk to you about... Over."

Vagabond: "Corsair in answer to your question about... Over."

Corsair: "Vagabond, thanks for the information about... (call sign and out)."

After each transmission, say "OVER" and release the microphone **Push to Talk** (PTT) button. This confirms that the transmission has ended. When all communication with the other vessel is totally completed, end the message by stating your call sign and the word "OUT." Remember, it is not necessary to state your call sign with each transmission, only at the beginning and end of the message.



NOTE

For best sound quality at the shore station or other vessel receiving your call, hold the microphone/speaker at least 2 in. (51 mm) from your mouth and slightly off to one (1) side. Speak in a normal tone of voice.

Digital Selective Calling (DSC)

Digital selective calling (DSC) is a semi-automated system for establishing a radio call. It has been designed by the International Maritime Organization (IMO) as an international standard for VHF, MF and HF calls and is part of the Global Maritime Distress and Safety System (GMDSS).

DSC will eventually replace aural (listening) watches on distress frequencies and will be used to announce routine and urgent maritime safety information broadcasts. Until DSC is fully implemented, it is still necessary to maintain a listening watch on Channel 16.

The DSC system allows mariners to instantly send a distress call with GPS position coordinates (requires a GPS receiver to be connected to the radio) to the Coast Guard and other vessels within range of the transmission. DSC also allows mariners to initiate and receive distress, urgent, safety, routine, position request, position send and group calls between vessels equipped with DSC capable radios.



Maritime Mobile Service Identity (MMSI)

An MMSI is a nine (9) digit number used on a marine radio capable of using digital selective calling (DSC). It is used to selectively call other vessels or shore stations and is similar to a telephone number.

For your CobraMarine radio to operate in the **DSC** mode, you must enter your Maritime Mobile Service Identity (MMSI) number. See page 62 for instructions on how to enter your number.

MMSI Numbers are available in the U.S.A. from these Sources:

- Boat U.S.: 800-563-1536 – www.boatus.com/mmsi
- Maritel: 888-Maritel (888-627-4835)
- Sea Tow International: 631-765-3660 – www.seatow.com

In Canada, Contact:

Industry Canada Spectrum Management Office (only available on the Internet):
<http://strategis.ic.gc.ca/epic/internet/insmt-gst.nsf/vwGeneratedInterE/sf01742e.html>

To Obtain an MMSI Number Outside the U.S.A.:

Users can obtain an MMSI from their country's telecommunications authority or ship registry. This may involve amending or obtaining a ship station license.



WARNING

This equipment is designed to generate a digital maritime distress and safety signal to facilitate search and rescue. To be effective as a safety device, this equipment must be used only within communication range of a shore-based VHF marine channel to distress and safety watch system. The range of the signal may vary, but under normal conditions should be approximately 20 nautical miles.



Radiotelephone Calls

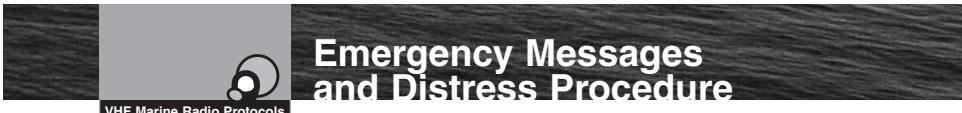
Boaters may make and receive radiotelephone calls to and from any number on the telephone network by using the services of public coast stations. Calls can be made — for a fee — between your radio and telephones on land, sea and in the air. See pages 14 through 23 for the public correspondence (marine operator) channels.

If you plan to use these services, consider registering with the operator of the public coast station that you plan to work through. Those services can provide you with detailed information and procedures to follow.



NOTICE

You may disclose privileged information during a radiotelephone call. Keep in mind that your transmission is **NOT** private, as it is on a regular telephone. Both sides of the conversation are being broadcast and can be heard by anyone who has a radio and tunes to the channel you are using.



Emergency Messages and Distress Procedure

Emergency Messages and Distress Procedure

The ability to summon assistance in an emergency is the primary reason to have a VHF marine radio. The marine environment can be unforgiving, and what may initially be a minor problem can rapidly develop into a situation beyond your control.

The Coast Guard monitors Channel 16, responds to all distress calls, and coordinates all search and rescue efforts. Depending on the availability of other capable vessels or commercial assistance operators in your vicinity, Coast Guard or Coast Guard Auxiliary craft may be dispatched.

In any event, communicate with the Coast Guard as soon as you experience difficulties and before your situation becomes an emergency. Use the emergency message procedures only after your situation has become grave or you are faced with a sudden danger threatening life or property and requiring immediate help. Use Channel 16 to communicate your emergency message. Make sure you transmit on high power. If you are merely out of gas, do not send an emergency message. Drop your anchor and call a friend or marina to bring the fuel you need or to give you a tow.

Marine Emergency Signals

The three (3) spoken international emergency signals are:

MAYDAY

The distress signal **MAYDAY** is used to indicate that a station is threatened by grave and imminent danger and requests immediate assistance.

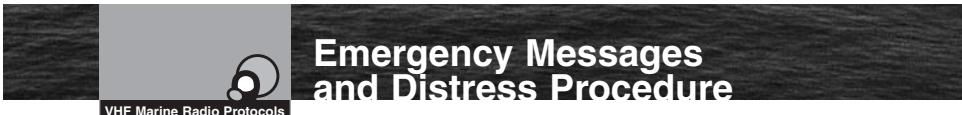
PAN

The urgency signal **PAN** is used when the safety of the vessel or person is in jeopardy. (This signal is properly pronounced pahn.)

SECURITE

The safety signal **SECURITE** is used for messages about the safety of navigation or important weather warnings. (This signal is properly pronounced see-cure-ee-tay.)

When using an international emergency signal, the appropriate signal is to be spoken three (3) times prior to the message.



If You Hear a Distress Call

You must give any message beginning with one (1) of these signals priority over any other messages. ALL stations MUST remain silent on Channel 16 for the duration of the emergency unless the message relates directly to the emergency.

If you hear a distress message from a vessel, stand by your radio. If it is not answered, YOU should answer. If the distressed vessel is not nearby, wait a short time for others who may be closer to acknowledge. Even if you cannot render direct assistance, you may be in a position to relay the message.

Marine Distress Procedure

Speak slowly — clearly — calmly.

1. Make sure your radio is On.
2. Select Channel 16.
3. **Press Talk button and say:**
“MAYDAY — MAYDAY — MAYDAY.”
(Or “PAN — PAN — PAN,”
or “SECURITE — SECURITE — SECURITE.”)
4. **Say:**
“THIS IS [your vessel name or call sign],” repeated three (3) times.
5. **Say:**
“MAYDAY (or “PAN” or “SECURITE”)
[your vessel name or call sign].
6. **Tell where you are:**
(what navigational aids or landmarks are nearby).
7. State the nature of your distress.
8. State the kind of assistance needed.
9. Give number of persons aboard and conditions of any injured.
10. Estimate present seaworthiness of your vessel.
11. Briefly describe your vessel (length, type, color, hull).
12. **Say:**
“I WILL BE LISTENING ON CHANNEL 16.”
13. **End message by saying:**
“THIS IS [your vessel name or call sign] OVER.”
14. Release **Talk** button and listen. Someone should answer.
If not, repeat the call, beginning at step 3 above.

Keep the radio nearby. Even after your message has been received, the Coast Guard can find you more quickly if you can transmit a signal for a rescue boat to hone in on.



Emergency Messages and Distress Procedure

For Example

“Mayday — Mayday — Mayday”

“This is Corsair — Corsair — Corsair” [or “IL 1234 AB”], repeated three (3) times.

“Mayday Corsair (or IL 1234 AB)”

“Navy Pier bears 220 degrees magnetic — distance 5 miles”

“Struck submerged object and flooding — need pump and tow”

“Four adults, three children aboard — no one injured”

“Estimate we will remain afloat one-half hour”

“Corsair (or IL 1234 AB) is 26 ft sloop with blue hull and tan deck house”

“I will be listening on Channel 16”

“This is Corsair (or IL 1234 AB)”

“Over”

It is a good idea to write out a script of the message form and post it where you and others on your vessel can see it when an emergency message needs to be sent.

Marine Distress Procedure – DSC

Digital Selective Calling (DSC) is a semi-automated system that will allow you to press the **Distress** button from any routine to make a distress call. When the distress button is pressed, all other channels go to **Standby** mode and allow the digitally encoded “pre-programmed” message to take precedence. Important information such as your MMSI number, position and name will be transmitted on Channel 16. The distress alarm will sound for two (2) minutes or until the alarm is cleared.

The DSC system allows you to choose a “pre-programmed” distress call such as: “Man Overboard, Sinking, Collision.” There are many pre-programmed choices to choose from. If a GPS is connected to your radio, your coordinates will also be sent to the Coast Guard as well as to other vessels that are within range of the transmission. DSC calling also allows the user to initiate and receive distress, urgent, safety, routine, position request, position send and group calls between vessels equipped with DSC capable radios.

**WARNING**

This radio will generate a digital maritime distress and safety signal to help facilitate search and rescue. This radio must be used only within communication range of a shore based VHF station with a distress and safety watch system. The range of the signal may vary, however, under normal conditions should be approximately 20 nautical miles.



VHF Marine Channel Assignments

Three (3) sets of VHF channels have been established for marine use in the U.S.A., Canada and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are definite differences (see table on pages 16-23). Your radio has all three (3) maps built into it and will operate correctly in whichever area you choose.

The following is a brief outline of the channel assignments in the U.S.A. Channel Map.

Distress, Safety and Calling

Channel 16

Getting the attention of another station (calling) or in emergencies (distress and safety).

Calling

Channel 9

General purpose (non-emergency) calling by non-commercial vessels. Recreational boaters are urged to use this channel to reduce congestion on Channel 16.

Intership Safety

Channel 6

Ship-to-ship safety messages and for search and rescue messages to Coast Guard ships and aircraft.

Coast Guard Liaison (U.S and Canadian)

Channel 22A

To talk to the Coast Guard (non-emergency) after making contact on Channel 16.

Non-Commercial

Channels 68*, 69, 71, 72, 78A, 79A*, 80A*

Working channels for small vessels. Messages must be about needs of the vessel, such as fishing reports, berthing and rendezvous. Use Channel 72 only for ship-to-ship messages.

Commercial

Channels 1A, 7A, 8, 9, 10, 11, 18A, 19A, 63A, 67, 72, 79A, 80A, 88A*

Working channels for working ships only. Messages must be about business or needs of the ship. Use Channels 8, 67, 72 and 88A only for ship-to-ship messages.



Public Correspondence (Marine Operator)

Channels 24, 25, 26, 27, 28, 60, 61, 84, 84A, 85, 85A, 86, 86A, 87, 87A, 88*

For calls to marine operators at public coast stations. You can make and receive telephone calls through these stations.

Port Operations

Channels 1A*, 5A*, 12*, 14*, 18, 19, 20A, 21, 22, 63A*, 65A, 66A, 73, 74, 75, 76, 77*, 79, 80, 81, 82

Used for directing the movement of ships in or near ports, locks or waterways. Messages must be about operational handling, movement and safety of ships.

Navigational

Channels 13, 67

Channels are available to all vessels. Messages must be about navigation, including passing or meeting other vessels. These are also the main working channels for most locks and drawbridges. You must keep your messages short and power output at no more than 1 watt.

Maritime Control

Channel 17

For talking to vessels and coast stations operated by state or local governments. Messages must be about regulation and control, boating activities or assistance.

Digital Selective Calling

Channel 70

This channel is set aside for distress, safety and general calling using only digital selective calling techniques. Voice communication is prohibited; your radio cannot transmit voice messages on this channel.

Weather

Channels Wx 1 Thru 9

Receive-only channels for NOAA and Canadian weather broadcasts. You cannot transmit on these channels.



NOTE

* These channels are restricted to the listed uses in certain parts of the country or for certain types of users only. Consult FCC rules or a knowledgeable radio operator before using them.



VHF Marine Channel Assianments

Channel Number	Channel Map			Frequency		Power Limits
	USA	Int'l	Canada	Transmit	Receive	
01		•	•	156.050	160.650	
01A	•			156.050	156.050	
02		•	•	156.100	160.700	
03		•	•	156.150	160.750	
03A	•			156.150	156.150	
04		•		156.200	160.800	
04A			•	156.200	156.200	
05		•		156.250	160.850	
05A	•		•	156.250	156.250	
06	•	•	•	156.300	156.300	
07		•		156.350	160.950	
07A	•		•	156.350	156.350	
08	•	•	•	156.400	156.400	
09	•	•	•	156.450	156.450	
10	•	•	•	156.500	156.500	
11	•	•	•	156.550	156.550	
12	•	•	•	156.600	156.600	
13	•	•	•	156.650	156.650	1 watt USA and CAN
14	•	•	•	156.700	156.700	
15	•			Rx Only	156.750	
15		•	•	156.750	156.750	1 watt CAN and INT
16	•	•	•	156.800	156.800	
17	•	•	•	156.850	156.850	1 watt USA and CAN



VHF Marine Channel Assainments

Channel	Use
01	Public Correspondence (Marine Operator)
01A	Port Operations and Commercial, VTS in selected areas
02	Public Correspondence (Marine Operator)
03	Public Correspondence (Marine Operator)
03A	Government Only (Unauthorized)
04	Public Correspondence (Marine Operator), Port Operations, Ship Movement
04A	West Coast (Coast Guard Only); East Coast (Commercial Fishing)
05	Public Correspondence (Marine Operator), Port Operations, Ship Movement
05A	Port Operations, VTS in selected areas
06	Intership Safety
07	Public Correspondence (Marine Operator), Port Operations, Ship Movement
07A	Commercial
08	Commercial (Intership Only)
09	Boater Calling Channel, Non-Commercial (Recreational)
10	Commercial
11	Commercial, VTS in selected areas
12	Port Operations, VTS in selected areas
13	Intership Navigation Safety (Bridge-to-Bridge). In U.S. waters, large vessels maintain a listening watch on this channel.
14	Port Operations, VTS in selected areas
15	Environmental (Receive Only). Used by class C EPIRB's.
15	Canada (EPIRB Buoys Only); International (On-Board Communication)
16	International Distress, Safety and Calling
17	State Controlled (U.S.A. Only)



VHF Marine Channel Assianments

VHF Marine Radio Protocols

Channel Number	Channel Map			Frequency		Power Limits
	USA	Int'l	Canada	Transmit	Receive	
18		•		156.900	161.500	
18A	•		•	156.900	156.900	
19		•		156.950	161.550	
19A	•		•	156.950	156.950	
20	•	•	•	157.000	161.600	1 watt CAN
20A	•			157.000	157.000	
21		•	•	157.050	161.650	
21A	•		•	157.050	157.050	
22		•		157.100	161.700	
22A	•		•	157.100	157.100	
23		•	•	157.150	161.750	
23A	•			157.150	157.150	
24	•	•	•	157.200	161.800	
25	•	•	•	157.250	161.850	
26	•	•	•	157.300	161.900	
27	•	•	•	157.350	161.950	
28	•	•	•	157.400	162.000	
60		•	•	156.025	160.625	
61		•		156.075	160.675	
61A	•		•	156.075	156.075	
62		•		156.125	160.725	
62A			•	156.125	156.125	



VHF Marine Channel Assianments

Channel	Use
18	Port Operations, Ship Movement
18A	Commercial
19	Port Operations, Ship Movement
19A	Commercial
20	Canada (Coast Guard Only); International (Port Operations, Ship Movement)
20A	Port Operations
21	Port Operations, Ship Movement
21A	U.S. (Government Only); Canada (Coast Guard Only)
22	Port Operations, Ship Movement
22A	U.S. and Canadian Coast Guard Liaison and Maritime Safety Information Broadcasts that are announced on Channel 16
23	Public Correspondence (Marine Operator)
23A	Government Only
24	Public Correspondence (Marine Operator)
25	Public Correspondence (Marine Operator)
26	Public Correspondence (Marine Operator)
27	Public Correspondence (Marine Operator)
28	Public Correspondence (Marine Operator)
60	Public Correspondence (Marine Operator)
61	Public Correspondence (Marine Operator), Port Operation, Ship Movement
61A	U.S. (Government Only); Canada (Coast Guard Only); West Coast (Coast Guard Only); East Coast (Commercial Fishing)
62	Public Correspondence (Marine Operator), Port Operations, Ship Movement
62A	West Coast (Coast Guard Only); East Coast (Commercial Fishing)



VHF Marine Channel Assianments

VHF Marine Radio Protocols

Channel Number	Channel Map	Frequency		Power Limits		
	USA	Int'l	Canada	Transmit	Receive	
63		•		156.175	160.775	
63A	•			156.175	156.175	
64		•	•	156.225	160.825	
64A	•		•	156.225	156.225	
65		•		156.275	160.875	
65A	•	•	•	156.275	156.275	
66		•		156.325	160.925	
66A	•	•	•	156.325	156.325	1 watt CAN
67	•	•	•	156.375	156.375	1 watt USA
68	•	•	•	156.425	156.425	
69	•	•	•	156.475	156.475	
70	•	•	•	156.525	156.525	DSC Use Only
71	•	•	•	156.575	156.575	
72	•	•	•	156.625	156.625	
73	•	•	•	156.675	156.675	
74	•	•	•	156.725	156.725	
75		•		156.775	156.775	1 watt Only INT
76		•		156.825	156.825	1 watt Only INT
77	•	•	•	156.875	156.875	1 watt USA and CAN



VHF Marine Channel Assainments

Channel	Use
63	Public Correspondence (Marine Operator), Port Operations, Ship Movement
63A	Port Operations and Commercial, VTS in selected areas
64	Public Correspondence (Marine Operator), Port Operations, Ship Movement
64A	U.S. (Government Only); Canada (Commercial Fishing)
65	Public Correspondence (Marine Operator), Port Operations, Ship Movement
65A	Port Operations
66	Public Correspondence (Marine Operator), Port Operations, Ship Movement
66A	Port Operations
67	U.S. (Commercial). Used for bridge-to-bridge communications in lower Mississippi River (Intership Only); Canada (Commercial Fishing), S&R
68	Non-Commercial (Recreational)
69	U.S. (Non-Commercial, Recreational); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
70	Digital Selective Calling (Voice communications not allowed.)
71	U.S. and Canada (Non-Commercial, Recreational); International (Port Operations, Ship Movement)
72	Non-Commercial (Intership Only)
73	U.S. (Port Operations); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
74	U.S. (Port Operations); Canada (Commercial Fishing Only); International (Intership, Port Operations, Ship Movement)
75	Port Operations (Intership Only)
76	Port Operations (Intership Only)
77	Port Operations (Intership only). Restricted to communications with pilots for movement and docking of ships.



VHF Marine Channel Assianments

Channel Number	Channel Map USA	Channel Map Int'l	Channel Map Canada	Frequency Transmit	Frequency Receive	Power Limits
78		•		156.925	161.525	
78A	•		•	156.925	156.925	
79		•		156.975	161.575	
79A	•		•	156.975	156.975	
80		•		157.025	161.625	
80A	•		•	157.025	157.025	
81		•		157.075	161.675	
81A	•		•	157.075	157.075	
82		•		157.125	161.725	
82A	•		•	157.125	157.125	
83		•	•	157.175	161.775	
83A	•		•	157.175	157.175	
84	•	•	•	157.225	161.825	
84A	•			157.225	157.225	
85	•	•	•	157.275	161.875	
85A	•			157.275	157.275	
86	•	•	•	157.325	161.925	
86A	•			157.325	157.325	
87	•	•	•	157.375	161.975	
87A	•			157.375	157.375	
88	•	•	•	157.425	162.025	
88A	•			157.425	157.425	



NOTE

Many of the plain numbered channels, such as 01, 02 and 03, transmit on one frequency and receive on another. This is termed duplex operation. The rest of the plain numbered channels and all of the A channels, such as 01A, 03A and 04A, transmit and receive on a single frequency, which is termed simplex operation. Your radio automatically adjusts to these conditions. When in simplex operation, the A icon will appear on the LCD (see illustration on page A2).



VHF Marine Channel Assianments

VHF Marine Radio Protocols

Channel	Use
78	Public Correspondence (Marine Operator)
78A	Non-Commercial (Recreational)
79	Port Operations, Ship Movement
79A	Commercial (Also Non-Commercial only in Great Lakes)
80	Port Operations, Ship Movement
80A	Commercial (Also Non-Commercial only in Great Lakes)
81	Port Operations, Ship Movement
81A	U.S. (Government Only; Environmental Protection Operations)
82	Public Correspondence (Marine Operator), Port Operation, Ship Movement
82A	U.S. (Government Only); Canada (Coast Guard Only)
83	Canada (Coast Guard Only)
83A	U.S. (Government Only); Canada (Coast Guard Only)
84	Public Correspondence (Marine Operator)
84A	Public Correspondence (Marine Operator)
85	Public Correspondence (Marine Operator)
85A	Public Correspondence (Marine Operator)
86	Public Correspondence (Marine Operator)
86A	Public Correspondence (Marine Operator)
87	Public Correspondence (Marine Operator)
87A	Public Correspondence (Marine Operator)
88	Public Correspondence (Ship to Coast). In U.S. only within 75 miles of Canadian Border.
88A	Commercial Intership Only

**NOTE**

All channels are pre-programmed at the factory according to international regulations and those of the FCC (U.S.A.) and Industry Canada (Canada). They cannot be altered by the user nor can modes of operation be changed between simplex and duplex.



NOAA Weather Channels and Alert

Monitoring the weather will probably be a frequent use of your radio. NOAA provides continuous, around-the-clock broadcasts of the latest weather information. Taped weather messages run every four (4) to six (6) minutes and are revised every two (2) or three (3) hours, or as needed. The Coast Guard also announces weather and other safety warnings on Channel 16 and DSC Channel 70. Smart boaters keep an eye on safety and an ear to the radio — and never let the weather catch them unaware.

NOAA Emergency Weather Alert

In the event of a major storm or other weather condition requiring vessels at sea or on other bodies of water to be notified, NOAA broadcasts a 1050 Hz tone that receivers such as your CobraMarine VHF radio can detect and warn you of a weather alert condition. When the Weather Alert mode on your radio is On, this signal will produce the weather alert alarm tone from the speaker and a "weather alert" message on the LCD to signal that a weather alert is being broadcast.

The radio will automatically switch to Weather Radio mode.

Test

To test this system, NOAA broadcasts the 1050 Hz signal every Wednesday sometime between 11 a.m. and 1 p.m. in each local time zone. Any receiver that can detect the weather alert tone may use this feature to verify that this feature is functioning properly.

Weather Frequency/Channel

Channel	RX Frequency MHz	Weather Channel
1	162.550	NOAA
2	162.400	NOAA
3	162.475	NOAA
4	162.425	NOAA
5	162.450	NOAA
6	162.500	NOAA
7	162.525	NOAA
8	161.650	Canadian
9	161.775	Canadian
10	163.275	NOAA



World City Time Zones

In order to set correct local time as compared to different World City Time Zones, enter the hour "offset" as listed below. The correct local time appears on the VHF for Cities all over the world. See page 43 for setup information.

Longitudinal Zone	Offset	City
E172.50 to W172.50	-12	IDLW (International Date Line West)
W172.50 to W157.50	-11	Nome
W157.50 to W142.50	-10	Honolulu
W142.50 to W127.50	-9	Yukon STD
W127.50 to W112.50	-8	Los Angeles STD
W112.50 to W097.50	-7	Denver STD
W097.50 to W082.50	-6	Chicago STD
W082.50 to W067.50	-5	New York STD
W067.50 to W052.50	-4	Caracas
W052.50 to W037.50	-3	Rio de Janeiro
W037.50 to W022.50	-2	Fernando de Noronha
W022.50 to W007.50	-1	Azores Islands
W007.50 to E007.50 GMT	+0	London
E007.50 to E022.50	+1	Rome
E022.50 to E037.50	+2	Cairo
E037.50 to E052.50	+3	Moscow
E052.50 to E067.50	+4	Abu Dhabi
E067.50 to E082.50	+5	Maldives
E082.50 to E097.50	+6	Dhuburi
E097.50 to E112.50	+7	Bangkok
E112.50 to E127.50	+8	Hong Kong
E127.50 to E142.50	+9	Tokyo
E142.50 to E157.50	+10	Sydney
E157.50 to E172.50	+11	Solomon Islands
E172.50 to W172.50	+12	Auckland



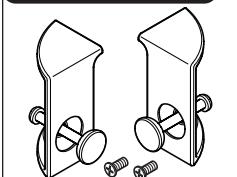
Included in this Package

You should find all of the following items in the package with your CobraMarine VHF radio:

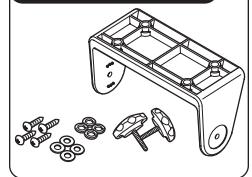
Transceiver



Transceiver Flush Mount Kit



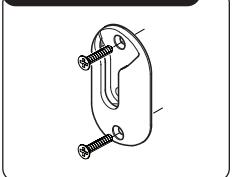
Transceiver Surface Mount Kit



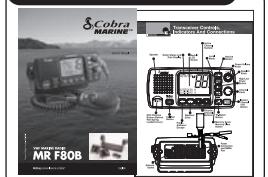
Microphone



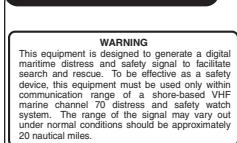
Mic Mounting Kit



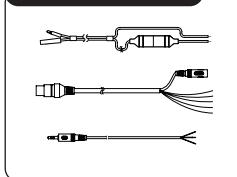
Operating Instruction Manual



Warning Sticker

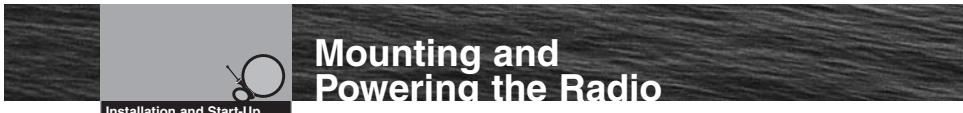


Power/Interface Cables



NOTE

Cobra Accessory Harness CM 140-001 is an **optional** wire harness that is used to interface the MR F80 radio with the Cobra MC 600C Series chartplotters.



Installation and Start-Up

Mounting and Powering the Radio

Before using your CobraMarine VHF radio, it must be installed on your vessel.

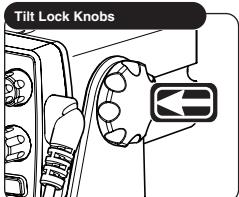
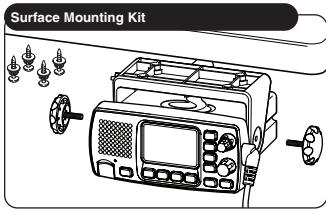
Installing Your Radio

Choose a location for your radio where it will be conveniently accessible with the following factors in mind:

- The leads to the battery and the antenna should be as short as possible.
- The antenna must be mounted at least 3 ft (0,9 m) from the transceiver.
- The radio and all speakers need to be far enough from any magnetic compass to avoid deviation due to the speaker magnet.
- There needs to be free air flow around the heat-sink fins on the back of the transceiver.

Surface Mount

A Surface Mounting kit is included with your CobraMarine VHF radio to allow its installation on almost any flat horizontal surface.



To Mount the Transceiver on Almost any Flat Surface:

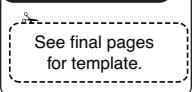
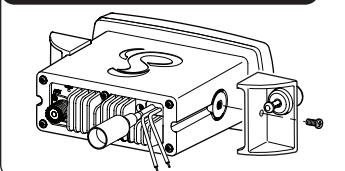
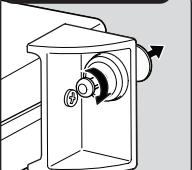
1. Use the mounting bracket as a template to drill holes for the mounting screws.
2. Attach the mounting bracket to the chosen surface with the mounting bracket screws and washers.
3. Attach the transceiver to the mounting bracket with the Tilt Lock knobs.
4. Tilt the transceiver to a convenient angle and tighten the Tilt Lock knobs.



Installation and Start-Up

Microphone Bracket Mounting Kit

Mounting and Powering the Radio

Use Supplied TemplateSee final pages
for template.**Insert Transceiver****Attach Mounting Brackets****Adjusting Screws**

Microphone Bracket Mounting Kit

To Install The Microphone Bracket Mounting Kit:

Install the microphone bracket mounting kit on a vertical surface near the transceiver using the supplied stainless steel screws.

Flush Mount

A Flush Mount kit is included with your CobraMarine VHF radio to allow its installation in almost any flat surface.

To Mount the Transceiver Flush in Almost any Flat Surface:

1. Use the supplied template (VHF Radio MRF80) to mark and cut an opening in the flat surface. See page 80 for template.

**NOTICE**

Before cutting, be sure the area behind the flat surface is clear of any instruments, wires or structure that might be damaged in the process.

2. Insert the transceiver into the opening.

3. Attach the mounting brackets to the sides of the transceiver with the adjusting screw flanges facing the back of the flat surface.
4. Tighten the adjusting screws against the back of the flat surface until the flange on the front of the transceiver is tight against the flat surface. Do not over-tighten.

Mounting and Powering the Radio

Installation and Start-Up

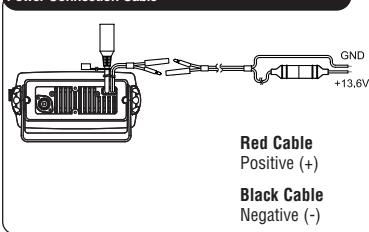
Warning Sticker



Warning Sticker

FCC regulations require that the Warning Sticker supplied with this radio be applied to a spot where it is easily seen by the radio operator. Be sure the location is clean and dry before applying the sticker.

Power Connection Cable



Electrical Power Connection

Electrical power is supplied to the transceiver by two (2) bullet-type connectors coming from a 13.8-volt DC voltage source (12-volt nominal). The positive lead must be attached to a fused connector.

To Connect to a Power Source:

1. Attach the **black** (-) wire to a **negative** (-) ground.
2. Attach the fused **red power** (+) wire to the **positive** (+) side of the power system.



NOTE

This radio will draw up to 8 amps when transmitting at full power.



NOTE

Cobra Accessory Harness CM 140-001 is an **optional** wire harness that is used to interface the MR F80 radio with the Cobra MC 600C Series chartplotters.



NOTICES

A reverse polarity connection will damage the radio.

When replacing the fuse in your transceiver, use only the size and type originally provided.



Mounting and Powering the Radio

Installation and Start-Up

**NOTE**

All wiring is best kept as short as possible. If the power leads must be extended, use a high-quality, marine-grade cable sized for up to 10 amps of current. To minimize voltage drop, choose a wire gauge as follows:

Length	Wire Gauge
Up to 1.5m(4.9ft)	1.6 mils(#14)
Up to 3.0m(9.8 ft)	2.0 mils(#12)
Up to 5.0m(16.4 ft)	2.6 mils(#10)
Up to 6.0m(19.7 ft)	3.3 mils(#8)



Antenna Requirements and Attachment

Antenna Requirements and Attachment

Antenna Requirements

Your CobraMarine VHF radio requires an external marine antenna to send signals into the air and to receive them. The radio is arranged to use any of the popular marine VHF antennas, but it is up to you to choose which antenna to use.

Since it represents the link between your radio and the outside world, Cobra suggests you purchase the best quality antenna, coaxial cable and connectors you can. This is best accomplished with the advice and guidance of a knowledgeable dealer who can assess the variables involved with your particular boat and preferences.



WARNING

Compliance with FCC requirements for Radio Frequency Exposure is the responsibility of both the antenna installer and the radio operator.

Safe Maximum Permissible Exposure (MPE) Radius

To avoid health hazards from excessive exposure to RF energy, FCC OET Bulletin 65 establishes an MPE radius of 10 ft (3 m) for the maximum power of your radio with an antenna having a maximum power gain of 9 dBi. This means that all persons must be at least 10 ft (3 m) away from the antenna when the radio is transmitting.

Installation Requirements

- An omnidirectional antenna with a gain not greater than 9 dBi must be mounted at least 16.4 ft (5 m) above the highest deck where people may be during radio transmissions, measured vertically from the lowest point of the antenna. This provides the minimum separation distance to comply with RF exposure requirements and is based on the MPE radius of 10 ft (3 m) plus the 6.6 ft (2 m) height of an adult.
- For vessels without structure to mount the antenna as described in A, it must be mounted as follows AND all persons must be outside the 10 ft (3 m) MPE radius during radio transmissions. The antenna must be mounted so that its lowest point is at least 3.3 ft (1 m) vertically above the heads of all persons during radio transmissions.

Antenna Requirements and Attachment

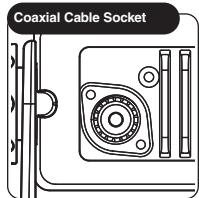
Installation and Start-Up



WARNING

Do not transmit when anyone is within the MPE radius of the antenna unless that person or persons are shielded from the antenna by a grounded metallic barrier. This is especially important on vessels with antennas mounted as described in B where no one may be within 9 ft (2,8 m) horizontally from the base of the antenna during transmissions.

FAILURE TO OBSERVE THE ABOVE LIMITS MAY EXPOSE THOSE WITHIN THE MPE RADIUS TO RF ENERGY ABSORPTION IN EXCESS OF THE FCC MAXIMUM PERMISSIBLE EXPOSURE. IT IS THE RADIO OPERATOR'S RESPONSIBILITY TO ENSURE THAT MPE LIMITS ARE HEEDED AND THAT NO ONE IS WITHIN THE MPE RADIUS DURING TRANSMISSIONS.



Antenna Lead Attachment

Once the antenna is installed, the Coaxial Cable Lead can be attached to the coaxial cable socket at the back of the transceiver.



NOTICE

Attempting to transmit without an antenna attached will damage your CobraMarine VHF radio.



External Devices and Connections

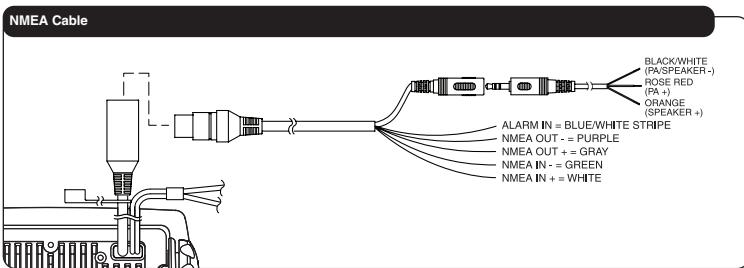
Installation and Start-Up

External Devices and Connections

Your CobraMarine VHF radio is set up to connect auxiliary devices for navigation, convenience and added versatility. As is the case with the antenna, choosing these devices is best done with the advice and guidance of a knowledgeable dealer. Standard connectors are provided on the front and back of the transceiver.

NMEA Communication Cable

Your CobraMarine Radio is set up with an NMEA communication port that allows the radio to communicate with other electronic equipment such as a GPS Chartplotter, Depth Sounder, Auto Pilot, DSC VHF Radio, Radar and Personal Computer with the ability to display information. This capability allows for the operator to do Position Polling and Position Requests directly from the radio. The NMEA input and output leads are directed through the NMEA communication port.



External Speaker (Not Included)

An External Speaker can provide greater volume to hear messages than the speaker in the transceiver.

To Install an External Speaker:

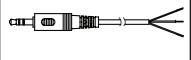
1. Connect the **speaker positive** (+) wire to the orange wire coming out of the standard speaker/PA wire harness.
2. Connect the **speaker negative** (-) wire to the black/white wire coming out of the standard speaker/PA wire harness.



External Devices and Connections

Installation And Start-Up

Speaker/PA Cable

**Public Address Speaker (Not Included)**

At times, it may be handy to address other boats or give instructions to line handlers on the dock. Your CobraMarine VHF radio can be switched to operate in the Public Address mode through an attached PA speaker.

To Install a Public Address Speaker:

1. Connect the PA **speaker positive** (+) wire to the rose red wire coming out of the standard speaker/PA wire harness.
2. Connect the PA **speaker negative** (-) wire to the black/white wire coming out of the standard speaker/PA wire harness.

Global Positioning System (GPS) Device (Not Included)

Cobra Electronics strongly recommends that you obtain and connect a GPS device to your CobraMarine VHF radio. By having a GPS connected, your position will be continuously indicated on the LCD and, most importantly, it will be included automatically in any DSC distress message you may need to send. That will take the "search" out of "search and rescue."

To Install a GPS Device:

1. Install the **GPS** device in a convenient location according to its manufacturer's directions.
2. Bond the **NMEA out negative** (-) wire of your GPS to the **NMEA in negative** (-) wire (green) of the MR F80 NMEA/IO interface cable.
3. Bond the **NMEA out positive** (+) wire of your GPS to the **NMEA in positive** (+) wire (white) of the MR F80 NMEA/IO interface cable.

**NOTE**

When bonding the wires, make sure connections are secure and properly insulated to prevent electrical arching.

4. Connect the new combination cable to the **GPS** device and to the back of the transceiver.

External Devices and Connections

**NOTE**

Satellite acquisition time is dependent on the **GPS** device.

CobraMarine Chartplotter MC 600C Series

Your CobraMarine VHF radio is set up to connect directly to your chartplotter with a custom accessory cable that eases the installation.

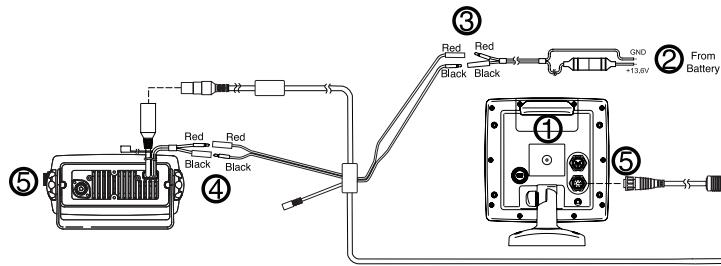
The chartplotter uses a state-of-the-art electronic chart system, designed as a custom navigation aid. All calculations and information necessary for the navigation are performed and displayed on the chartplotter quickly and accurately providing all of the capabilities of a conventional GPS, but with the added benefit of a powerful electronic chart display.

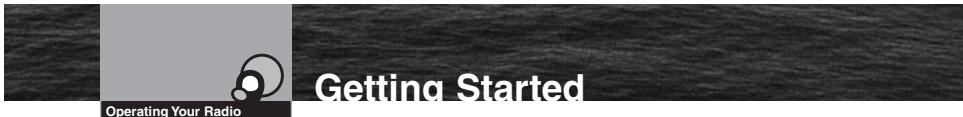
Wiring the chartplotter to the transceiver is made easy with a custom-made optional Accessory Cable harness P/N CM 140-001. This cable has a molded 8-pin connector that plugs directly into the appropriate connectors on the MR F80 and the MC 600C Series.

To Install the Chartplotter:

1. Install the chartplotter in a convenient location according to the chartplotter owner's manual.
2. Complete the Electrical Power Connection to the power cable as detailed on page 29.
3. Connect the red and black bullet connectors on the power cable supplied with the MR F80 to the mating connectors on the CM 140-001 cable.
4. Connect the red and black bullet connectors on the back of the radio to the mating connectors on the CM 140-001 cable.
5. Plug in the 8 pin connectors to the MR F80 and MC 600C.

MR F80 to Chartplotter Connection





Getting Started

Refer to the foldout at the front of this manual to identify the various controls and indicators on your radio.

Throughout this manual you will be instructed to press, or to press and hold buttons on the transceiver or on the microphone/speaker. Press means a momentary press, then release; press and hold means to hold the button down.

Tones and Alarms

When your CobraMarine VHF radio is On, you can expect to hear the following tones and alarms. The volume of these sounds is controlled by the circuitry in the radio and is not affected by the volume set with the On-Off Power/Volume knob or **Volume Up/Down** buttons.

Confirmation Tone

A single, high-pitched beep confirms all button presses except the Talk button. It can be turned On or Off. See setup routines on page 41.

Error Tone

Three (3) medium-pitch tones indicate an invalid button press (error).

DSC Distress Alarm

High—low—high—low—high. Pause, then repeat. The volume of this alarm will increase after 10 seconds. Press any button to turn it Off.



NOTE

This alarm sounds only for DSC distress calls on Channel 70. It does not sound for voice calls on Channel 16 — you still must listen for those.

Distress Acknowledgement Alarm

High—low. Long pause, then repeat. Press any button to turn it Off.

DSC Routine Call Alarm

High—pause—high—pause—high. Long pause, then repeat. Press any button to turn it Off.

DSC Geographical Alarm

Loud, continuous, medium-pitched, high-low tones (warble) — sounds when a geographical call is received. Press any button to turn it Off.



Getting Started

DSC Position Request Alarm

Medium-loud, continuous, low-pitched series of closely spaced, four (4) beeps [three (3) short – one (1) long] groups — sounds when a POSITION REQUEST call is received. Press any button to turn it Off.

DSC Individual Alarm

Medium-loud, continuous, medium-pitched, three (3) beep groups — sounds when an Individual call is received. Press any button to turn it Off.

Weather Alarm

Medium-loud, continuous, medium-pitched series of one-half second beeps spaced one-half second apart — sounds when weather alert is turned On and NOAA sends a 1050 Hz weather alert tone on the selected weather channel. Press any button to turn it Off.

Power On-Off – Volume/Squelch

On-Off

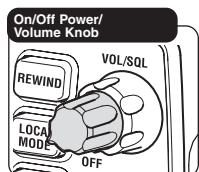
Transceiver power can be turned On or Off by using the On/Off — Volume rotary concentric knob located at the upper right-hand side of the radio.

Volume

Volume is controlled by turning the On/Off Volume rotary concentric knob. The radio speaker is located on the left side of the display.

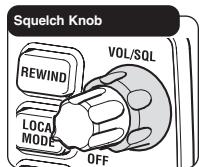
To increase the volume, turn the **Rotary** knob clockwise.

To decrease the volume, turn the **Rotary** knob counterclockwise.





Getting Started



Squelch

Squelch control is controlled by turning the inner (back) rotary concentric knob located directly behind the On/Off – Volume knob. With the power On, turn the knob counterclockwise till you hear a hissing sound, then turn the knob clockwise till the hissing stops. This will establish a “Baseline” squelch.

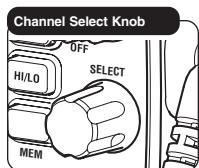
By turning the knob further in a clockwise direction, you will filter weak and medium-strength signals. By turning the knob further in a counterclockwise direction from your baseline setting, you will receive weaker signals.

Squelch control filters weak signals and radio frequency (RF) noise so that you will clearly hear the signals you want.



NOTE

If the Squelch is set so that you can hear a continuous hissing sound, the Memory Scan and Tri-Watch functions will be blocked.



Channel Select Using Radio Knob

Allows for the manual selection of all the VHF marine channels that have been established for use in the U.S.A., Internationally and in Canada.



NOTE

This knob will also allow scrolling in many of the setup and advanced operation menus.

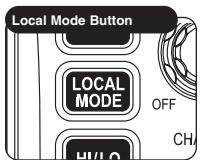
When the Channel Select knob on the radio is turned in a clockwise rotation, higher numbered VHF marine channels can be accessed. When the **Channel Select** knob on the radio is turned in a counterclockwise direction, lower numbered VHF marine channels can be accessed.

Channel Select Using Microphone

By pressing microphone **Channel Up** button, higher numbered VHF marine channels can be accessed. By pressing the microphone **Channel Down** button, lower numbered VHF marine channels can be accessed.



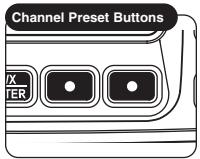
Getting Started



Local Mode Button

The radio features a **Local Mode** button that decreases radio sensitivity when operating inside populated areas.

- When the **Local Mode** button is On, the power of an inbound receive (Rx) signal is reduced without distorting the waveform. Reducing an inbound signal power prevents "noise interference" from random RF Noise in populated marinas, cities and commercial areas. When the **Local Mode** button is On, the "Local On" icon displays.
- When the **Local Mode** button is Off, the radio receives a full signal with an extended operational range.



Channel Preset (Function) Buttons

Use the **Channel Preset** buttons for direct access to favorite channels in the **Standby** mode and as selection keys in the Setup mode.

- When a **Channel Preset** button is pressed and released, the radio goes directly to the assigned preset channel. If no preset channels are assigned, three (3) error tones sound. After the button is released, the radio returns to the **Standby** mode.
- When a **Channel Preset** button is pressed and held for more than two (2) seconds, the working channel will be assigned to the button.



Getting Started

Standby and Receive

Standby mode is the usual mode for the radio whenever it is turned On.

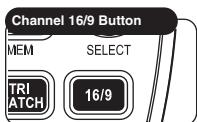
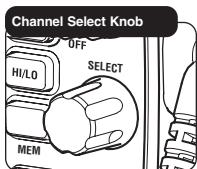
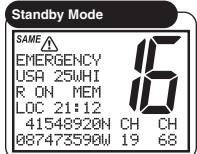
From Standby Mode, You Can:

- Change your radio's settings using setup routines.
- Receive messages on the current channel as well as DSC messages.
- Receive NOAA alerts if **Weather Alert** mode is turned On.
- Switch to **Transmit** mode using the **Talk** button.

While the radio is in **Standby** mode, the **Receive** mode is entered whenever a strong enough signal to break squelch is sent to the radio. You will hear the message through whichever speakers are connected to the radio.

To Change the Channel You Are Listening to, You Can Choose One of the Following:

1. Turn the **Channel Select** knob clockwise for higher VHF channel. Turn the **Channel Select** knob counterclockwise for lower VHF channel.
2. Press **Channel Up/Down** buttons on microphone to go to the next higher or lower VHF channel. For rapid advance, press and hold the **Channel Up/Down** button.
3. Press the **Channel 16/9** button. This will take you to Channel 16 with one (1) press and to Channel 9 with a second press. Additional presses will toggle between Channels 16, 9 and original channel.
4. Press the **Weather/Enter** button. This will allow you access to the weather channels. Turning the **Channel Select** knob or pressing the **Channel** button on the microphone allows you to change weather channels.
5. Press the **Tri-Watch** button to monitor three (3) Channels 16, 9 and one user selectable channel.

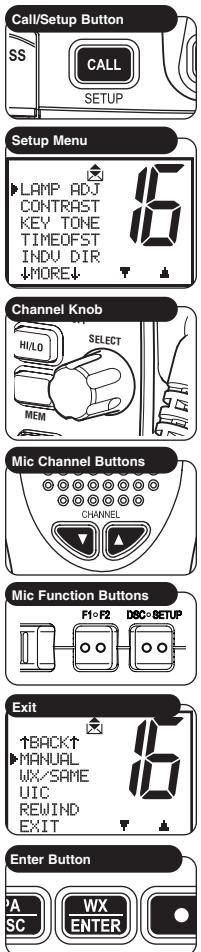




Setup Mode Programming

Setup Menu

Use the **Setup** menu in the CobraMarine VHF radio to turn On and Off many features, to adjust feature preferences and enter a user MMSI number.



NOTE

Basic **Setup** menu programming is described in this section. For **Setup** menu programming that applies to a specific function refer to that section in this manual. For example, MMSI information is in the DSC portion of the manual.

Basic Scrolling in the Setup Menus:

The **Channel Select** knob on the radio can be used to scroll through different menus and confirm selections chosen by the user. Alternately, scrolling selection functions can be made from the microphone by using the **Channel Up/Down** or **Function (F1/F2)** button.

To Enter the Setup Menu:

Press and hold the **Call/Setup** button. The **Setup** menu appears on the LCD. Scroll up or down through the **Setup** menu until the desired function to program is positioned to the right of the selection arrow.

To Exit any Setup Menu:

Scroll down to "EXIT" at the bottom of the menu. With the arrow pointing toward "EXIT," press the **Enter** button to return the radio to the **Standby** mode.



NOTE

The **ESC** button on the radio (and the **Function F1/F2** button on the microphone) can also be used universally to return to the **Standby** mode.



Operating Your Radio

Setup Mode Programming



LCD Display Lamp Adjust

The LCD display has a backlight lamp to make it visible in the dark. The lamp can be adjusted for brightness or turned off. Make all lamp adjustments in the **LAMP ADJ** menu.

The lamp will operate at the HIGH level until adjusted to HIGH, MEDIUM, LOW, NIGHT or OFF.

To Adjust the LCD Display Lamp Level:

1. Enter the **Setup** menu and scroll to the **LAMP ADJ** menu.
2. Press the **Enter** button and observe the current backlight lamp setting — HIGH, MEDIUM, LOW, NIGHT or EXIT.
3. Move the selection arrow to the required setting.
4. Press the **Enter** button to select the backlight lamp setting.
5. When the changes are complete, exit the **LAMP ADJ** menu and return to the **Setup** menu.

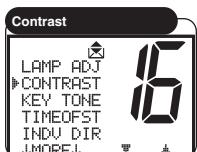
When the backlight is turned On, the lamp remains lit anytime the radio is On.

LCD Contrast

Adjust the LCD display contrast for easy reading in different lighting. Make all contrast adjustments in the **CONTRAST** menu.

To Change the Contrast:

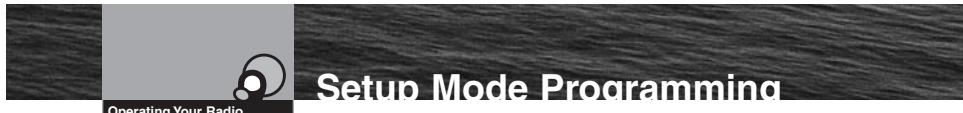
1. Enter the **Setup** menu and scroll to the **CONTRAST** menu.
2. Press the **Enter** button and observe the current contrast setting — a number between 1 and 16.
3. Turn the **Channel** knob to increase or decrease the contrast setting.



NOTE

Contrast is lighter at lower number settings and darker at higher number settings.

4. Press the **Enter** button to select the contrast setting.
5. When the changes are complete, exit the **CONTRAST** menu and return to the **Setup** menu.



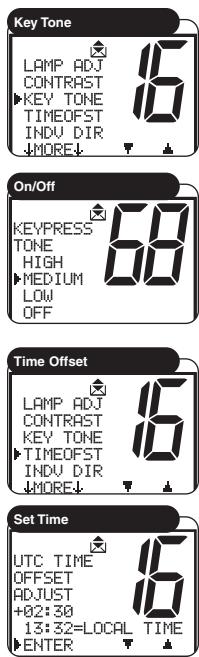
Setup Mode Programming

Key Tone

The confirmation key tone sounds when the CobraMarine VHF radio is turned On and confirms all button presses except for the **Talk** button. The confirmation key tone is easily turned On or Off. Make all confirmation key tone adjustments in the **KEY TONE** menu.

To Turn the Confirmation Key Tone On or Off:

1. Enter the **Setup** menu and scroll to the **KEY TONE** menu.
2. Press the **Enter** button and observe the current confirmation key tone setting — High, Medium, Low or Off.
3. Select your desired level.
4. Press the **Enter** button to select the key tone setting.
5. When the changes are complete, exit the **KEY TONE** menu and return to the **Setup** menu.



Time Offset

All VHF, DSC, and GPS activities use a 24-hour clock and Coordinated Universal Time (UTC) formerly known as Greenwich Mean Time (GMT). Time Offset uses a connected GPS to gather time inputs. To convert time inputs to local time, enter the hour offset of the local time zone from the Time Zone Chart on page 25.

To Change the Time Offset:

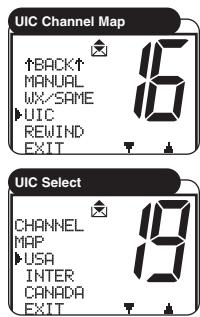
1. Enter the **Setup** menu and scroll to the **TIMEOFST** menu.
2. Press the **Enter** button and observe the current time offset setting.
3. Move the selection arrow to the setting for your local time zone.
4. Press the **Enter** button to select the local time zone setting.
5. When the changes are complete, exit the **TIMEOFST** menu and return to the **Setup** menu.



NOTE

When the time offset is at zero (0), the LCD shows the time as UTC. When a time zone hour offset is entered, the LCD shows the local time. All DSC messages are based on UTC.

The radio will also show the local time as the adjustment is being made.



U.S.A./International/Canada (UIC) Channel Maps

There are three (3) sets of VHF Channel Maps for marine use in the U.S.A., Canada and the rest of the world (International). Most of the channels are the same for all three (3) maps, but there are differences (see tables on pages 16-23). The radio is built with all three (3) channel maps included and operates correctly in any selected area.

To Set the Radio for the Area Used:

1. Enter the **Setup** menu and scroll to the **UIC** menu.
2. Press the **Enter** button and observe the current channel map setting.
3. Move the selection arrow to select the desired channel.
4. Press the **Enter** button to select the channel map setting.
5. When the changes are complete, exit the **UIC** menu and return to the **Setup** menu.



Special Features

Rewind-Say-Again™ Feature

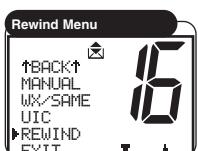
The MR F80 radio has a Cobra exclusive playback feature, **Rewind-Say-Again™**. This feature allows you to replay the last 20 seconds of an incoming audio transmission. It also allows you to record call details including position coordinates, call signs, registration numbers and store details that will help authorities locate a distressed vessel.

Example 1:

When engine noise, music or conversation creates too much noise to hear an inbound message clearly, press the **Rewind-Say-Again™** button to hear the message a second time. This feature eliminates asking the sender to repeat the message.

Example 2:

When listening to an urgent distress of an excited caller with confusing background noise, press the **Rewind-Say-Again™** button to hear the message a second time and get lifesaving information.



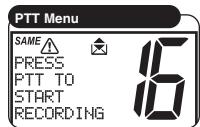
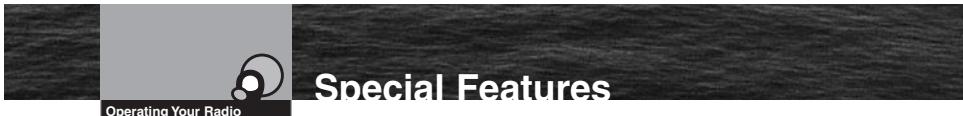
Operation of Rewind-Say-Again™

1. Press the **Rewind** button after the last inbound audio transmission.
2. The radio automatically replays the last 20 seconds of the previous audio transmission.
3. Respond to the caller normally, after the message is replayed.

Setup and Advanced Operation of Rewind-Say-Again™

Change the Record Setting

1. Enter the **Setup** menu and scroll to the **REWIND** menu. You can also enter the **REWIND** mode by pressing and holding the **REWIND** button.
2. Press the **Enter** button and observe the current rewind setting — ON or OFF.
3. Select your choice: ON or OFF and press **Enter**. Choose ON if you want the MRF80 to record received transmissions. Choose OFF if you want to turn off the recording feature.



Make Your Own Recording

The recording feature may also be used to store other important information like fuel consumption, water conditions, fishing notes (such as thermal cline depths, type of bait, etc.) and other "On Water" observations.

1. Follow the steps above to get into **REWIND** mode setup.
2. Select the **RECORD** function. Press **ENTER** to start the recording mode.
3. Press the **Push to Talk (PTT)** button on the microphone to begin your recording. A 20-second countdown displays showing how much time remains for recording. At the end of 20 seconds, a beep sounds indicating that the recording time is completed.
4. Playback recorded message or select OFF to exit this mode and keep the recording in memory.



NOTE

The **REWIND** feature can also be used to permanently store an incoming message. This could be useful if you are not able to copy information while underway such as coordinates, directions and other complicated information. Once the incoming transmission (up to 20 seconds) is complete, Follow the instructions to turn the **REWIND** feature off. The last incoming transmission will be recorded to the unit's memory.



Voice Transmission

Voice Transmission

Use the **Transmit (TX)** mode to communicate with safety services, other vessels and shore stations. When using this capability, follow appropriate procedures and observe the expected courtesies.

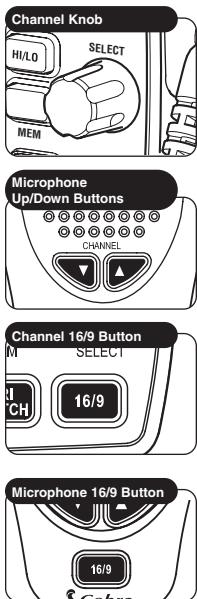
Before pressing the **Talk** button to transmit a message, select the appropriate channel and transmit power output.

Channels

Voice messages may be transmitted on most VHF channels. Refer to the VHF marine channel assignments on pages 14-23 to select a channel based on the type of message being transmitted.

Choose One of the Following Options to Change the Channel:

- Turn the **Channel Knob** or press the microphone **Channel Up/Down** buttons. This moves the channel to the next higher or lower VHF channel. (When on Channel 88A, the next higher channel is Channel 1 and vice versa.) For rapid advance, press and hold the microphone **Channel Up/Down** buttons. (The confirmation key tone sounds for each button press, but not during rapid advance.)
- Press the **Channel 16/9** button on the radio or the microphone. This selects Channel 16 with one press and Channel 9 with a second press. Additional presses will toggle between Channel 16 and Channel 9. Press and hold the **Channel 16/9** button to return to **Standby** mode.



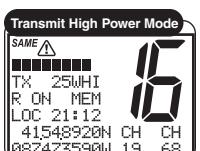
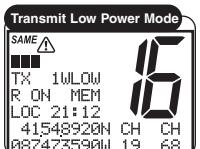
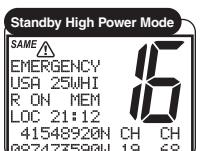
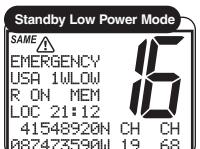
NOTE

The radio will automatically select high power on channel 16 if you use the **Channel 16/9** button to select this channel. Select 16 manually or save it as a preset if you would like to routinely use channel 16 on low power mode.



Transmit Power Output

The radio transmits selectively at 1 or 25 watts of power. Cobra suggests maintaining the low power setting for short-range communications to avoid overpowering nearby stations with the signal. Use the high power setting for long-range communications or when no response is received from a signal sent at 1 watt.



To Toggle Between the High and Low Power Modes:

Press the **HI/LO Power** button.

The LCD displays which mode is selected.

Some channels are restricted to be used at a maximum of 1 watt. The radio automatically sets the power to **Low Power** mode when a restricted channel is selected.

While using the U.S.A. channel map, if, in an emergency, it is necessary to increase the output power on Channel 13 and Channel 67 for the signal to be heard, override the **Low Power** mode by pressing and holding the **HI/LO Power** button.

Transmit a Message

To Transmit a Message:

1. Check to see that the radio is set to a proper channel for the type of message being sent.
2. Toggle to the low power setting by pressing the **HI/LO Power** button.
3. With the microphone about 2 in. (51 mm) from your mouth, press and hold the **Talk** button and speak into the microphone. **TX** (Transmit) displays on the LCD display.
4. Release the **Talk** button when finished speaking. To hear a response, the **Talk** button must be released.



Voice Transmission



NOTE

If the **Talk** button is held down for five (5) minutes, the radio automatically ceases transmitting to prevent unwanted signal generation and a three (3)-beep error tone sounds. As soon as the **Talk** button is released, it can be pressed again to resume transmission.

Public Address

Use the **Public Address (PA)** mode of voice transmission to communicate to other nearby vessels or people. This feature requires a mounted and connected optional PA speaker.

To Broadcast on the PA Speaker:

1. Press the **PA/ESC** button on the front of the transceiver.
2. Press the **Talk** button on the microphone and speak into the microphone.

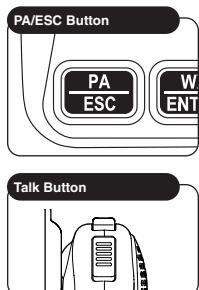


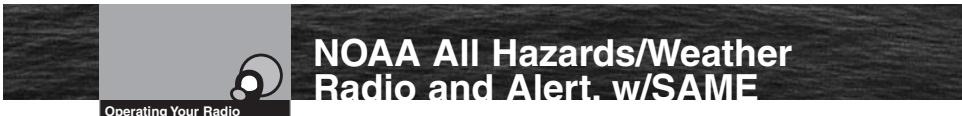
NOTE

While in the **PA** mode:

- When the **Talk** button is pressed; the output is directed to the **PA** speaker and not transmitted as a radio signal through the antenna.
- Received radio messages are directed to the **PA** speaker unless the **Talk** button is pressed.

3. To turn off PA, press **PA/ESC** button on the front of the radio again or press the **Function F1/F2** button on the microphone to **ESC**.





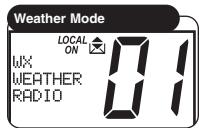
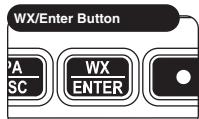
NOAA All Hazards/Weather Radio and Alert, w/SAME

NOAA broadcasts weather information as described in the NOAA Weather Channels section on page 25 of this manual. Listen to one of these receive-only channels at any time. The transceiver also incorporates "Specific Area Message Encoding (SAME)" and "Emergency Alert System Codes" sent by NOAA. These codes provide the type of alert, and are listed on page 51.



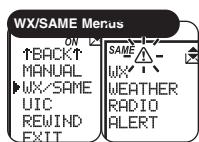
NOTE

Usually only one (1) or two (2) of the weather channels operate in a location. Select the channel with the strongest signal in your location. The radio scans this channel for the weather alert signal.



To Listen to the Weather Channels:

1. From **Standby** mode, press the **WX/ENTER** button. The unit enters the **Weather** mode and displays on the LCD.
2. Turn the **Channel** knob or press the **Channel Up/Down** buttons on the microphone to change the weather channels.
3. To exit the **Weather** mode and return to **Standby** mode, press the **WX/ENTER** button again.



Weather Alert Setup

The **Weather Alert** mode must be turned On to receive the Weather Alert condition signal described in the NOAA weather channels section on page 25.

To Turn Weather Alert On:

1. Enter the **Setup** menu and scroll to **WX/SAME** (weather alert) menu.
2. Press the **Enter** button and observe the current weather alert setting — ON, OFF or EXIT.
3. Move the selection arrow to select the desired weather alert setting.
4. Press the **Enter** button to select the weather alert setting.
5. When the changes are complete, exit the **WX/SAME** menu and return to the **Setup** menu.

NOAA All Hazards/Weather Radio and Alert. w/SAME

Introduction

**NOTE**

The **△** symbol will appear on the top of the display when the weather alert is turned On.

Specific Area Message Encoding (SAME)

The **SAME** weather alert allows listeners and EAS (Emergency Alert System) participants to filter the National Weather Radio (NWR) broadcast of warnings and emergency alerts to receive only messages and information for your selected local geographic area.

The **Weather Alert** must be turned On for the **SAME** alert code to be set. The **SAME** alert requires that a specific six (6) digit code be programmed into this radio. To program this **SAME** receiver with the proper county(s) and marine areas(s) of choice, you need to know the 6 digit **SAME** code number(s) for the county(s). This setting allows up to 10 available codes that may be set up in any order. Any of the codes may be turned On or Off for specific weather area information to be listed.

**NOTE**

You can obtain online information at <http://www.nws.noaa.gov/nwr/same.htm#program> or by telephone at 1-888-NWR-SAME (1-888-697-7263) to program the **SAME** alert into this radio.

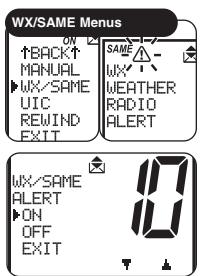
General **SAME** Information:

County codes:

<http://www.nws.noaa.gov/nwr/index.htm>

Marine coverage:

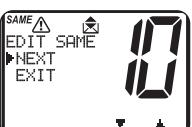
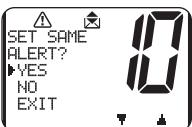
<http://www.nws.noaa.gov/om/marine/marsame.htm>

**To Set the SAME Weather Alert:**

1. Enter the **Setup** menu and scroll to the **WX/SAME** (weather alert) menu.
2. Press the **Enter** button and observe the current weather alert setting – **ON**, **OFF** or **EXIT**.



NOAA All Hazards/Weather Radio and Alert. w/SAME



3. Turn the **Channel** knob to select alert ON.
4. Depress the **Enter** button and select YES to set the same alert.



NOTE

The **Weather** channels may be turned Off, while the **SAME** area code alerts are On or any combination of On or Off.

5. Turn the **Channel** knob to select **EDIT**. Press **Enter** button.
6. Turn the **Channel** knob or press the **Function (F1, F2)** buttons on the radio to select the **SAME** alert code number (1-10) you wish to program.
7. Press the **Enter** button to start entering the **SAME** code number. First number entry location will start to blink.
8. Turn the **Channel** knob or press the **Channel Up/Down** buttons on the microphone to enter the six (6) digit **SAME** code number you want to enter.
9. Use the **Function (F1, F2)** buttons on the radio to move to the next or previous number. Repeat steps 7 and 8 until all six digits have been entered.
10. Press the **Enter** button to complete the code entry.
11. Move the selection arrow to **NEXT** to set another **SAME** alert channel. If desired. Ten total codes can be programmed.
12. When the changes are complete, exit the **WX/SAME** menu and return to the **Setup** menu.



Advanced Operation

There are several features in the CobraMarine MR F80 VHF radio that provide quick access to the voice calling channels and allow monitoring more than one (1) channel at a time.

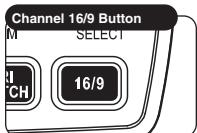
Channel 16/9

This function provides quick access to calling Channel 16 or Channel 9 from any operational mode.

To Switch to Channel 16 or Channel 9:

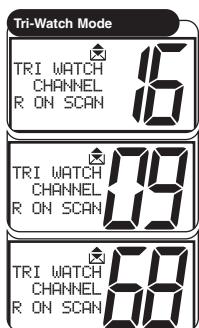
1. Press the **Channel 16/9** button to change to Channel 16.
2. Press the **Channel 16/9** button again to change to Channel 9.
3. Press the **Channel 16/9** key again to go back to the original working channel.

When on Channel 16 or Channel 9 in the **Channel 16/9** mode, turn the **Channel Knob**, press the **Channel Up/Down** button on the microphone or press the **Function (F1/F2)** button to change to other channels.





Advanced Operation



Tri-Watch

Use **Tri-Watch** one-button access to scan the three (3) channels of most importance. Channel 16 is always included as scanned locations. The remaining locations can be set using the following procedure.



NOTE

The radio must be squelched for the **Tri-Watch** to function. See page 38 for the Squelch procedure. **To Set Tri-Watch Channels:**

1. In **Standby** mode, turn the **Channel** knob or press the **Channel Up/Down** buttons on the microphone to select a 2nd or 3rd scanning channel location.
2. Press the **Tri-Watch** button to set a new **Tri-Watch** channel.

The Tri-watch screen will display on the LCD and the radio will scan amongst Channel 16 and the other two **Tri-Watch** locations you've selected. A signal on any one (1) of the three (3) channels stops the scan and transmits traffic on that channel. The channel number it is paused on displays on the LCD.

During Tri-Watch When Receiving an Incoming Transmission:

1. Press the **Talk** button to remain on that **Tri-Watch** location and return to **Standby** mode.
2. Turn the **Channel** knob or press the **Channel Up/Down** buttons on the microphone to resume scanning **Tri-Watch** locations.

If no button is pressed, the radio automatically resumes scanning **Tri-Watch** locations when an incoming transmission is completed.

During Tri-Watch When Not Receiving an Incoming Transmission:

Press the **Talk** button to communicate on the last **Tri-Watch** location scanned and to return to the **Standby** mode.



Advanced Operation

Memory Channels

Program or select an unlimited number of channels for the **Memory Scan** mode.

To Program Memory Channels:

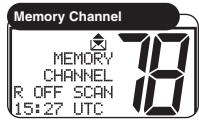
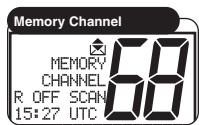
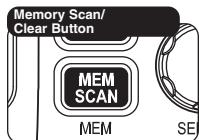
1. From **Standby** mode, select a channel to record using the **Channel Up/Down** buttons.
2. Press and hold the **Memory Scan/Memory Clear** button for three (3) seconds. The channel is recorded for scanning and **MEM** (memory channel) appears on the LCD when that channel is selected.
3. Press the **Memory Scan/Memory Clear** button to begin scanning.

The radio returns to **Standby** mode when the **Memory Scan/Memory Clear** button is pressed again.

4. Repeat steps 1 through 2 to record additional channels.

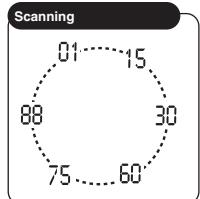
To Clear Memory Channels:

Repeat the steps above in the "To Program Memory Channels" section, this time holding the **Memory Scan/Memory Clear** button down for three (3) seconds to clear the memory from the selected channel. Repeat as necessary to clear additional channels.





Advanced Operation



Scanning of Memory Channels

During **Memory Scan** mode, the radio rapidly switches from one recorded channel to another. When any activity is detected, the radio stops the scan for 10 seconds for brief listening on that channel. The scan continues until the radio is switched out of the **Memory Scan** mode.



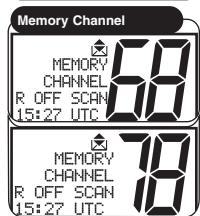
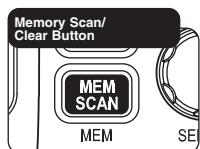
NOTE

If there are fewer than two (2) channels recorded, the **Memory Scan** mode is not available. (For instructions on recording at least two channels, see Memory Channels, page 55.)



NOTE

The radio must be squelched for the **Memory Scan** mode to function. See page 38 for Squelch procedure.



To Enter Memory Scan:

From **Standby** mode, press the **Memory Scan** button.

The radio immediately begins to scan the channels selected and **MEM SCAN** (memory scan) shows on the LCD.

To Exit Memory Scan:

From **Memory Scan** mode, press the **Memory Scan** button. The radio returns to **Standby** mode on the last scanned memory location.

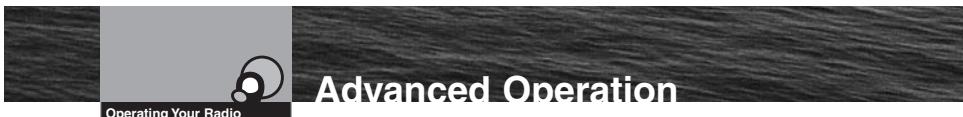
During Memory Scan When Receiving an Incoming Transmission:

1. Press the **Memory Scan** button to remain on that memory location and end scanning. The radio returns to **Standby** mode.
2. Press the **Channel Up/Down** microphone channel buttons or turn the **Channel** knob to resume scanning.

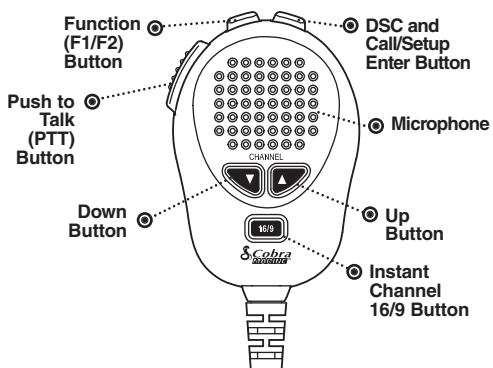
If no button is pressed within 10 seconds, the radio automatically resumes scanning.

During Memory Scan When Not Receiving an Incoming Transmission:

Press the **Talk** button to communicate on the last active channel scanned and return to **Standby** mode.



Operation from the Microphone



Use the microphone to select operation modes and accomplish approximately 90% of all radio functions. Microphone features include:

- **Instant Channel 16/9** button is used to access emergency channels.
- **Channel Up/Down** button is used to change channels.
- **Push to Talk (PTT)** button is used to send or record a radio message.
- **Function (F1/F2)** button is used to toggle between preset channels and/or, when in a menu, it acts as an **Escape** key.
- **Call/Setup and Enter** button is used to enter the routine Digital Selective Calling (DSC) menu and enter the setup menu for both advanced and basic setup functions.



NOTE

The microphone and the transceiver radio meet the JIS7 waterproof standards.



Digital Select Calling (DSC) Setup

Digital Select Calling (DSC) Setup

Digital Selective Calling (DSC) uses digital signals to increase messaging range. This provides the most reliable message delivery per watt of output power. Digital signals are less susceptible to distortion from noise and atmospheric conditions than analog signals.

DSC equipped radios also interface with GPS and automate many operations for sending and receiving messages. This results in compact, accurate messages and less airwave congestion.

Setup procedures for all DSC features use the **Setup** menu. Refer to page 40 for information on entering and exiting the **Setup** menu.

User MMSI Number

The nine (9) digit MMSI number, similar to a telephone number, is a unique identifier for a vessel. DSC incorporates this number into every message that is Sent (Tx) or Received (Rx). Enter the MMSI number as soon as you receive your MMSI number from the issuing agency listed on page 9.



NOTE

The radio does not operate in the **DSC** mode until an official MMSI number is entered. An error tone will sound when attempting to operate in the DSC mode without an MMSI number.

To Enter an MMSI Number:

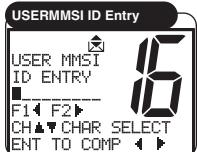
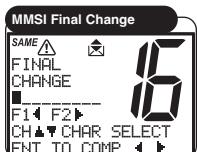
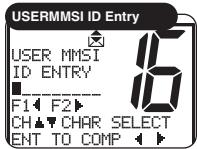
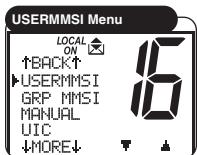


NOTICE

Only one MMSI number change is allowed on this unit. To prevent constant changes and potential errors, this MMSI number limitation is on all DSC capable radios. If the MMSI number must be changed more than once, return the radio to Cobra Electronics for resetting. Once the radio is reset, another MMSI number may be entered and the radio can then be used in the DSC mode.

Digital Select Calling (DSC) Setup

Operating Your Radio



1. Enter the **Setup** menu and scroll to **USERMMSI** menu.
2. Press the **Enter** button. A blinking cursor displays at the first digit under **USERMMSI ID ENTRY**.
3. Rotate the **Channel** knob to scroll through the number list to the digit of the MMSI number being entered.
4. Press the **F1 and F2 Function** buttons to select the digit. The blinking cursor moves to the next digit of the number.
5. Repeat steps 3 and 4 until all nine (9) digits of the MMSI number are entered.

**NOTE**

Press the **F1 Function** button to backspace and the **F2 Function** button to space forward. A new entry does not automatically erase previous entries.

6. Check that the number is entered correctly.
7. Press the **Enter** button to return to the **Setup** menu. If an MMSI Number is entered incorrectly, repeat steps 1 through 7 until correct. **Remember**, you only have one attempt to reset the MMSI number or the radio must be returned to Cobra Electronics for reset. See Product Service on page 79 for details on how to return your radio.

Transferring a Radio to a Different Vessel

Contact the agency that issued the MMSI number to change the vessel information associated with your MMSI number.

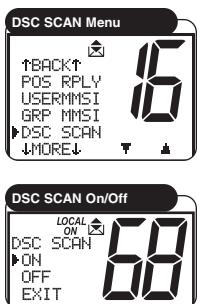
To View the Programmed MMSI Number at Any Time:

1. Enter the **Setup** menu and scroll to **USERMMSI**.
2. Press the **Enter** button and the MMSI number will appear.
3. Press the **Enter** button to return to the **Setup** menu.



DSC Scanning

Turn DSC Scanning Off to stop the radio from scanning Channel 70. DSC message transmissions continue but no DSC alarms sound. No DSC messages are received unless a distress message is transmitted. Distress message acknowledgements are received with DSC scanning On or Off.



To Turn DSC Scanning On or Off:

1. Enter the **Setup** menu and scroll to **DSC SCAN** menu.
2. Press the **Enter** button and observe the current setting — ON or OFF.
3. Select a setting by turning the **Channel** knob.
4. Press the **Enter** button to confirm selected item and return to the **Setup** menu.

Group MMSI Number

Nautical organizations like yacht clubs and regatta event organizers can establish Group MMSI numbers. Messages can then be automatically transmitted to all members of a group without making individual calls.

The Group MMSI is established by modifying the MMSI assigned to one (1) group member. To modify the MMSI number, drop the last digit of the number and insert a zero (0) at the beginning.

Example:

Member MMSI number 366123456 becomes Group MMSI number 036612345.

Group MMSI numbers may be entered and changed any time without resetting the radio. Each member of a group must enter the group MMSI number in their radio to receive group messages.

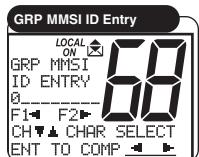
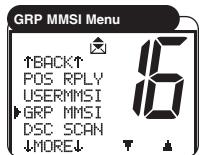


NOTE

ALL digits must be entered for the display to show complete.



Digital Select Calling (DSC) Setup



To Enter a Group MMSI Number:

1. Enter the **Setup** menu and scroll to **GRP MMSI** menu.
2. Press the **Enter** button. A blinking cursor displays at the first digit under **GRP MMSI ID ENTRY**. The leading zero (0) will be entered automatically.
3. Turn the **Channel** knob or press microphone **Channel Up/Down** buttons to scroll through the number list to the digit of the Group MMSI number being entered.
4. Press the **Enter** button to select the digit.
5. Press the **Channel Preset** buttons to move within the field.
6. Repeat steps 3, 4 and 5 until all nine (9) digits of the Group MMSI number are entered.
7. Press the **Enter** button when all digits are listed.
8. Check that the number is entered correctly.
9. Press the **Enter** button to return to the **Setup** menu.

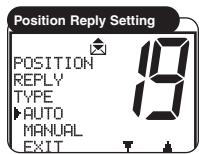
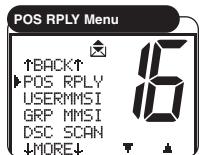
Position Request Reply Type

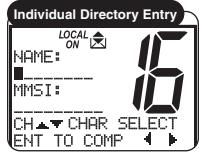
DSC radios with GPS send the position of a vessel to another station. This is useful for rendezvous and rescue situations.

Determine if the radio should automatically respond to all Position Requests received or if it should provide a **Position Request** alert and that can be manually selected and then provide a response.

To Set the Position Request Reply Type:

1. Enter the **Setup** menu and scroll to **POS RPLY** menu.
2. Press the **Enter** button and observe the current setting — AUTO or MANUAL.
3. Move the selection arrow to change the setting.
4. Press the **Enter** button to select the setting.
5. When the changes are complete, exit the **POS RPLY** menu and return to the **Setup** menu.





Digital Select Calling (DSC) Setup

Individual Directory

DSC can be used to call another vessel or station directly. This allows the user to make a call to a specific vessel that could be monitoring any channel. An alarm will sound on the receiving radio to make that station aware of your individual call. Up to 20 names and associated MMSI numbers may be stored in the radio for quick access.

To Enter or Edit Names or MMSI Numbers in the Individual Directory:

1. Enter the **Setup** menu and scroll to **INDV DIR** menu.
2. Press **Enter** to enter the individual directory.
3. **Name** and **MMSI** contents of the current location shows on the display
4. Press **Enter** to start entering **Name** data.
5. Rotate the **Select** button or the microphone up/down buttons to select alpha or numeric characters.
6. Press **F1** or **F2 Function** buttons to advance to the next character.
7. Repeat steps 5 and 6 until the complete **Name** entry has been made.
8. Press the **Enter** button to enter characters in the **MMSI** field.
9. Repeat steps 5 and 6 until the complete **MMSI** entry has been made.
10. Press the **Enter** button to accept the entry.
11. When the changes are complete, exit the **INDV DIR** menu and return to the **Setup** menu.



Digital Select Calling (DSC) Operation

The **Send** menu displays when the **Distress** button is pressed.

NOTE

 This radio follows Class-D DSC protocol with a dedicated Channel 70 receiver.

Sending Distress Calls

Sending and receiving distress calls and acknowledgements on Channel 70 can be a lifesaver for mariners.



NOTE

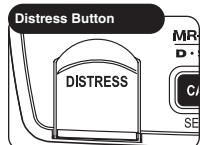
The DSC call:

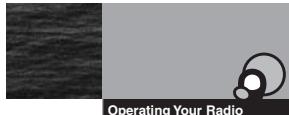
- Sounds the distress alarm at all receiving stations.
- Informs receiving stations of the sender's identity (MMSI).
- Informs receiving stations of the nature of the emergency.
- Informs receiving stations of sending position when a GPS device is connected or a position is manually entered.

DSC operation does not provide receiving stations with information like number of persons aboard or injuries. This specific information must be communicated by voice on Channel 16 to the station that acknowledges a DSC Distress call.

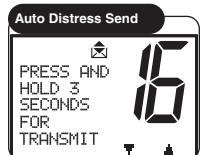
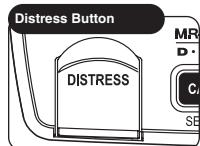
To Send a DSC Distress Call:

1. From **Standby** mode, lift the spring-loaded red door on the transceiver and press the **Distress** button. The **Distress** menu displays with an arrow pointing to **SEND**.





Digital Select Calling (DSC) Operation



There are three (3) choices:

- Send a distress call automatically, with your position, if you are connected to a GPS. Or send the call, without your position, if not connected to a GPS.
- Include a Nature of Distress message with the distress call.
- Abort the distress call process and return to **Standby** mode.

2. Choose one of the following:

Send an Automatic Distress Call:

Press and hold the **Distress** button.

Include a Nature of Distress Message with Distress Call:

a. Press and release the **Distress** button.

b. Turn the **Channel** knob or press the microphone **Channel Up/Down** buttons to manually select from the list of pre-programmed Nature of Distress calls — UNDEFINE, FIRE, FLOODING, GROUNDIN, COLLISIO, MORE.

c. Press and hold the **Distress** button for three (3) seconds to transmit the distress signal.

Abort the Distress Call Process:

If the **Distress** button is pressed by mistake or to discontinue resending an automatic distress message:

- a. Turn the **Channel** knob or press the microphone **Channel Up/Down** buttons to move the arrow to **EXIT**.
- b. Press the **Distress** button to return to **Standby** mode.



NOTE

You may also press the **ESC** (escape) button to return to the **Standby** mode.



The **Distress** alarm sounds to confirm that the message is transmitted. At the end of the transmission, the radio maintains a watch on Channel 16 and Channel 70 for an acknowledgement. Press any button to turn Off the alarm and return to **Standby** mode.

- If an acknowledgement is received, the **Distress** alarm sounds again and the responding party's MMSI number displays on the LCD.
- If no acknowledgement is received, the radio resends the message at approximately four (4) minute intervals until an acknowledgement is received or the Distress call is aborted.

Receiving Distress Calls

When a vessel is within range of a DSC Distress call, the radio receives the call, sounds the **Distress** alarm, and switches to Channel 16. All DSC calls that are received will sound one (1) alert alarm. See pages 36-37 for descriptions of the different alarms. Press any button to turn Off the alarm. The received call information continues to display on the LCD.

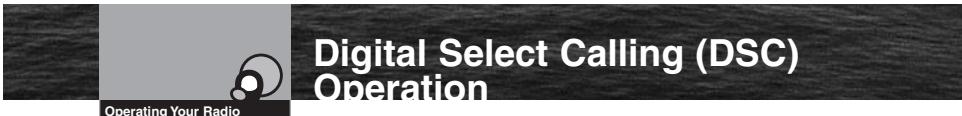
When a Distress Call is Received:

1. Press any button to turn Off the alarm and return to **Standby** mode on Channel 16.
2. Read and write down the distress information that displays on the LCD (position data may or may not be shown); then determine whether to answer the call.
3. Respond, if appropriate, by pressing and holding the **Talk** button to transmit on Channel 16.
4. The received information is placed into the **Call Log**. See page 75 for more information on viewing the **Call Log**.
5. If MMSI (Maritime Mobile Service Identify) matches a contact from the **Individual Directory** entry stored in your radio, the name identification displays and the alarm sounds to identify the **Name** of the matching MMSI member.
6. Press **ESC** after viewing the display to return to normal **Standby** mode.



NOTE

The radio automatically switches to Channel 16 upon



Digital Select Calling (DSC) Operation

receiving a DSC Distress call and the alarm will sound for approximately two (2) minutes. Press any button to clear the **Distress** alarm instantly.

Regarding Distress Relay Calls

This radio cannot send Distress Relay calls. Only large ships and shore stations, with specially equipped radios, can send Distress Relay calls.

Receiving Distress Relay Calls

This radio does respond to a Distress Relay call just as it responds to a Distress call.

Sending an All Ships Call

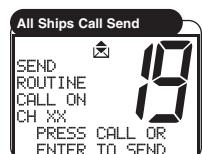
Use the DSC All Ships call for the same urgency and safety purposes as the Pan and Securite voice calls as well as sending Routine messages to all stations at once. The DSC All Ships call reaches all stations in radio range. Use the DSC All Ships call for urgent, but not life-threatening situations or to broadcast a safety warning to all vessels in the area. Use the DSC All Ships call judiciously for Routine calls.

To Send an All Ships Call:

1. In **Standby** mode, select a channel to communicate a routine call. The radio uses Channel 16 for urgent and safety calls.
2. Press the **Call/Setup** button to enter the **Call Setup** menu.
3. Scroll to **All Ships**.
4. Press **Enter** button for **All Ships** Call Select.
5. Scroll to type of call. The display shows: **URGENCY**, **SAFETY**, **ROUTINE** or **EXIT**. Select the type of call.
6. Press the **Enter** button twice to send a message.

NOTE

The radio display requires confirmation before sending Urgency and Safety calls.





Digital Select Calling (DSC) Operation

5. Depending on the type of message selected, the radio automatically switches to a voice channel.
 - a. After Urgency and Safety calls, the radio switches to Channel 16. Once on channel, press the **Talk** button to send the Urgency or Safety voice message.
 - b. After a Routine call, the radio switches to the channel selected in step 1. Once on channel, press the **Talk** button to send the Routine voice message.

DSC equipped radios that receive a DSC All Ships call message are automatically switched to the channel selected by the sender to hear a voice message.

To return to **Standby** mode, without sending a message, scroll to **EXIT** and press the **Enter** button.



Receiving an All Ships Call

All Ships calls received from stations within range of the radio sound the Distress alarm and switch the radio to Channel 16.

When an All Ships Call is Heard:

1. Press any button to turn Off the alarm and return to **Standby** mode.
2. Read and write down the MMSI information of the vessel sending the call as well as the date and time of the call.
3. Listen to the incoming voice message on the channel the radio selects for the incoming All Ships call.



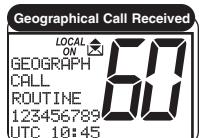
Digital Select Calling (DSC) Operation

Sending a Geographical Call

This radio does not send Geographical calls. Only large ships and shore stations with specially equipped radios send Geographical calls.

Receiving a Geographical Call

Geographical calls are transmitted by specially equipped radios to all stations in a particular area to alert only those stations of the call and not stations in unaffected geographical areas. When in an area to which a Geographical call is made, the radio sounds the geographical alarm and switches to the channel chosen by the transmitting station.

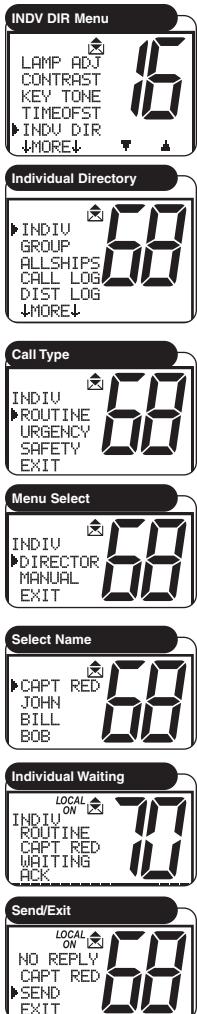


When a Geographical Call Sounds:

1. Press any button to turn Off the alarm.
2. Read and write down the MMSI information of the vessel sending the call as well as the date and time of the call.
3. Listen to the incoming voice message on the channel the radio selects for the incoming Geographical call.
4. Place call information in **Call Log**.
5. Press one (1) of the following buttons to switch from the Geographical call received to the **Standby** mode: **Channel 16/9** button or **ESC** button.



Digital Select Calling (DSC) Operation



Sending an Individual Call

Use the DSC Individual call feature to request communication with one (1) exclusive station. The DSC Individual call does not alert all other stations within range.

To Send an Individual Call:

1. In **Standby** mode, select a channel to communicate a call.
2. Press the **Call/Setup** button to enter the **Call Setup** menu.
3. Press the **Enter** button to enter to the **INDIV** select Directory.
4. Scroll to **Select** from **Routine**, **Urgency** or **Safety** as the type of call to send.
5. Press **Enter** button to advance to **Directory** or **Manual** selection. Scroll to select either method to send call. Press **Enter** button again.
6. Turn the **Channel** knob or press the **Channel Preset** buttons to select a name to call from the directory.
7. Press the **Enter** button to send the message or return to **Standby** mode if **EXIT** was chosen.
 - If the radio called sends back an automatic DSC response “able to comply,” the individual alarm will sound. Wait for a voice message from the called station.
 - If the radio called does not send an “able to comply” response, the radio waits eight seconds and resends the message.
 - If an “unable to comply” response or no reply is received, the radio display asks to resend the message or exit the menu.

At the **Unavailable** menu, select **SEND** or **EXIT** with the **Enter** button.

- If **SEND** is selected, the radio restarts the individual call.
- If **EXIT** is selected, the individual location on the **Call** menu displays.



Digital Select Calling (DSC) Operation



Receiving an Individual Call

When another station makes an Individual call to the radio:

- The Individual alarm sounds.
- The caller is identified on the LCD.
- The radio switches to the channel selected by the caller.
- Call information is placed in the **Call Log**.

To Receive an Individual Call:

Press the **Talk** button and greet the caller.

Sending a Group Call

Sending a Group call is like sending an Individual call, but the group MMSI information is used and the resend and DSC responses do not apply. See pg. 61 for creating and entering a group MMSI.

To Send a Group Call:

1. In **Standby** mode, press the **Call/Setup** button to enter the **Group call menu**.
2. Turn the **Channel** knob or press the microphone channel **UP/DOWN** buttons to scroll to **Group**.
3. Press the **Enter** button to move to the **channel select menu**.
4. Turn the **Channel** knob or press the microphone channel **UP/DOWN** buttons to select a channel to communicate the call.
5. Press the **Enter** button to send the message.
 - All radios switch to the channel selected in step 1. Press and hold the **Talk** button to send a voice message to everyone in the group.
 - Anyone in the group can transmit on the channel.





Digital Select Calling (DSC) Operation



Receiving a Group Call

When another station makes a Group call to the radio, the **Individual** alarm sounds, the caller is identified on the LCD, call information is placed in the **Call Log**, and the radio is switched to the channel selected by the caller, similar to an Individual call. Press any button to turn Off the alarm.

To Receive a Group Call:

1. Listen for the group voice message.
2. Press the **Talk** button and respond only if appropriate.

Sending a Position Request

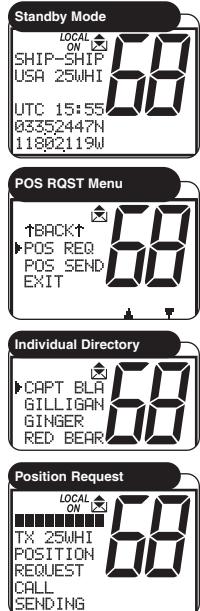
Position Request mode enables a DSC radio to obtain the position (latitude and longitude) of a station that has a GPS device connected to the DSC radio at that station. In most cases, a reply will be forthcoming. If for some reason, your request is not acknowledged in five (5) minutes, the user will be prompted to Resend the request or exit the menu.

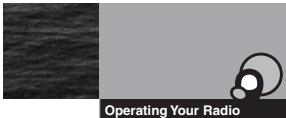
To Request the Position of Another Station:

1. In **Standby** mode, select a channel on which you want to communicate.
2. Press the **Enter** button to enter the **Call Setup** menu.
3. Scroll to **POS RQST** on the menu.
4. Press the **Enter** button to enter the **POS RQST** menu. This will link you to the Individual Directory for you to make a position request to one of your prior programmed Individual Directory members.
5. Scroll to the name of the station whose position you want to request.
6. Press the **Enter** button.

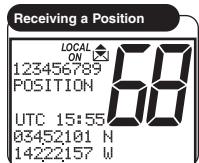
Your radio will send the **Position Request** and there will be one (1) of three (3) possible responses:

- You will receive the position.
- You will receive a no position data response, meaning the station you queried is not connected to a **GPS** device and cannot send its position.
- You will receive a no reply response, meaning the operator of that station has chosen not to reply to your request.





Digital Select Calling (DSC) Operation



If You Receive a Position:

The requested position with the station name and **MMSI** will show on your screen.

Press the **Enter** button to return to **Standby** mode after you have noted the station's position.



NOTE

If the MRF80 is connected properly to your Cobra chartplotter, you will see the requested position of the other vessel indicated on the display.



Receiving a Position Request

When you went through the **DSC Setup** process, you set a position request reply type. (See page 63 to change your setting.) Depending on the setting you chose, when a Position Request message is received, your radio will enter either:

- The **Auto Reply** mode.
- The **Manual Reply** mode.

When the Radio is in Auto Reply Mode:

A position request will sound the **Position Request** alarm and show the name of the requesting station on the LCD. Your radio will automatically respond. It will send your position, if you have a **GPS** device connected to your radio, or NO POS. DATA (no position data), if you do not have a **GPS** device connected.

Press any button to silence the alarm and exit the display.

When the Radio is in the Manual Reply Mode:

A position request message will sound the **Position Request** alarm and show the name of the requesting station. You can choose to:

- Reply and send your position.
- Exit without sending your position.

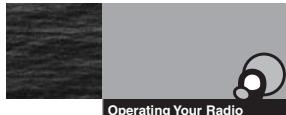
If You Choose to Reply with Your Position:

1. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons or press the **Function (F1/F2)** button to select **REPLY**.
2. Press the **Call/Setup** or **Enter** button to send your position.
3. Press any button to return to **Standby** mode.

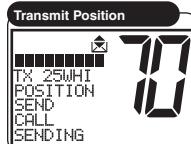
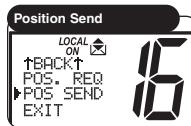
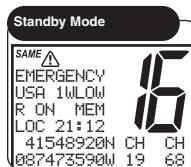
If You Choose Not to Reply:

1. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons or press the **Function (F1/F2)** button to select **EXIT**.
2. Press the **Enter** button to exit and return to **Standby** mode without sending your position.





Digital Select Calling (DSC) Operation



Sending a Position Send

Position Send uses your connected GPS in similar fashion to the **Position Request** function, except that you initiate the activity to let another station know where you are.

To Send a Position Send Message:

1. In **Standby** mode, select a channel on which you want to communicate.
2. Press the **Enter** button to enter the **Call Setup** menu.
3. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons or press the **Function (F1/F2)** button to scroll to **POS SEND** (position send).
4. Press the **Enter** button to enter the **Individual Directory**.
5. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons or press the **Function (F1/F2)** button to select the vessel/station to which you want to send your position.
6. Press the **Enter** button to send your position.

After your position is sent, the LCD will show **POS SEND** (position send). You will have two (2) choices.

- Resend your position to the same station.
- Exit from **Position Send** mode.

To Resend Your Position:

1. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons or press the **Function (F1/F2)** button to select **SEND**.
2. Press the **Enter** button to resend your position.

To Exit From the Position Send Mode:

1. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons or press the **Function (F1/F2)** button to select **EXIT**.
2. Press the **Enter** button to return to the **Call Setup** menu.

Receiving a Position Send

When another station sends you its position in **Position Send** mode, the **Individual** alarm will sound and the station's name and position will be shown on the LCD. Press any button to turn Off the alarm and return to **Standby** mode.

Digital Select Calling (DSC) Operation



Call Log and Distress Log

Call Waiting functions similarly to the Caller ID function on your telephone. It will capture the caller's MMSI identification number and any other data included in a DSC message.



NOTE

Each **Call Log** memory can hold up to 10 messages. Once the memory becomes full, each new call will erase the oldest call information on a first-in, first-out basis.

To Review Log Messages Received While in DSC Standby Mode:

1. From **Standby** mode, press the **Call** button to enter the **Call** menu.
2. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons to scroll to **CALL LOG** or **DIST LOG** menu.
3. Press the **Enter** button to enter either **LOG** menu.
4. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons to move from message to message in the **Call Log** memory.
5. Press the **ESC** button to return to the **Call Menu**.

To Clear Messages From The Log Memory:

1. Follow steps 1-3 above to enter the desired **LOG**.
2. Turn the **Channel** knob, or press the microphone **Channel Up/Down** buttons to select the message you want to delete.
3. Press the **F2** button under the screen to delete the selected message.

Repeat steps 4 through 5 to delete additional messages.

4. Press the **Enter** button to return to the **Call Menu**.



Maintenance

Very little maintenance is required to keep your CobraMarine VHF radio in good operating condition.

- Keep the radio clean by wiping with a soft cloth and mild detergent. Rinse with fresh water. Do not use solvents or harsh or abrasive cleaners, which could damage the case or scratch the LCD screen.
- If the radio is exposed to salt water, rinse it in fresh water at least once a day to prevent buildup of salt deposits, which could interfere with button operation.

Troubleshooting

Problem	Possible Cause(s)	Solution(s)
No display on LCD when radio is turned On	Improper power connection	Ensure power connections are proper and secure
Will transmit at 1 watt, but not at 25 watts	Selected channel is limited to 1 watt	Switch to another channel
Will not transmit	Selected channel is limited to receive only	Switch to another channel
No sound from speaker	Volume level is too low or squelch level is too deep	Readjust volume and squelch
No answer to calls	Out of range of other station Signal is blocked by terrain	Switch to high power (25 watts) or move closer Move until you have a "line-of-sight" to the other station
DSC distress cannot be sent	MMSI (DSC self-identification) number is not entered	Enter your MMSI number



Specifications

Specifications

General

Number of Channels	All U.S.A., Canadian, and International NOAA Weather Channels
Channel Spacing	25 kHz
Modulation	5 kHz Max.
Input Voltage	13.8 VDC
Current Drain:	
Stand-by	100 mA
Receive	500 mA
Transmit	5A @ High power 1A @ Low
Temperature Range	-4°F to 140°F (-20°C to 60°C)
Unit Dimensions	6.375" x 3" x 6.25" (162 mm x 76 mm x 159 mm)
Unit Weight	2 lbs., 6.8 oz. (1100 g)

Receiver

Frequency Range	156.050 to 163.275 MHz
Receiver Type	Double Conversion Super-Heterodyne
Sensitivity:	
20 dB Quieting	0.35 uV
12 dB Sinad	0.20 uV
Adjacent Channel Selectivity	-60 dB
Intermodulation and Rejection	-60 dB
Spurious and Image Rejection	-60 dB
AF Output	4 Watts @ 8 Ohms

Transmitter

Frequency Range: TX	156.025 to 157.425 MHz
RF Output Power	1 and 25 Watts
Spurious Emissions	-60 dB High -55 dB Low
Microphone Type	Electret
Frequency Stability	+/-10 ppm
FM Hum and Noise	40 dB



Warranty and Trademark

Limited 3-Year Warranty

For Products Purchased in the U.S.A.

Cobra Electronics Corporation warrants that its CobraMarine VHF radio, and the component parts thereof, will be free of defects in workmanship and materials for a period of three years from the date of first consumer purchase. This warranty may be enforced by the first consumer purchaser, provided that the product is utilized within the U.S.A.

Cobra will, without charge, repair or replace, at its option, defective radios, products or component parts upon delivery to the Cobra Factory Service department, accompanied by proof of the date of first consumer purchase, such as a duplicated copy of a sales receipt.

You must pay any initial shipping charges required to ship the product for warranty service, but the return charges will be at Cobra's expense, if the product is repaired or replaced under warranty. This warranty gives you specific legal rights, and you may also have other rights which may vary from state to state.

Exclusions: This limited warranty does not apply:

1. To any product damaged by accident.
2. In the event of misuse or abuse of the product or as a result of unauthorized alterations or repairs.
3. If the serial number has been altered, defaced, or removed.
4. If the owner of the product resides outside the U.S.A.

All implied warranties, including warranties of merchantability and fitness for a particular purpose are limited in duration to the length of this warranty. Cobra shall not be liable for any incidental, consequential or other damages; including, without limitation, damages resulting from loss of use or cost of installation.

Some states do not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations may not apply to you.

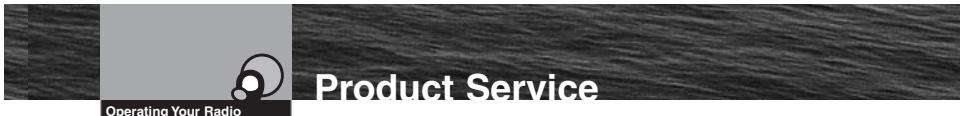
For Products Purchased Outside the U.S.A.

Please contact your local dealer for warranty information.

Trademark Acknowledgement

Cobra®, CobraMarine®, Nothing Comes Close to a Cobra®, and the snake design are registered trademarks of Cobra Electronics Corporation, USA.

Cobra Electronics Corporation™, CobraMarine™ and Rewind-Say-Again™ are trademarks of Cobra Electronics Corporation, USA.



Product Service

If you have any questions about operation or installing your new CobraMarine VHF product, or if you are missing parts...

Please call Cobra first! DO NOT RETURN THIS PRODUCT TO THE STORE!

See customer assistance on page A1.

If your product should require factory service, please call Cobra first before sending your radio. This will ensure the fastest turn-around time on your repair. You may be asked to send your radio to the Cobra factory. It will be necessary to furnish the following to have the product serviced and returned:

1. For warranty repair include some form of proof-of-purchase, such as a copy of a sales receipt. If you send the original receipt, it cannot be returned.
2. Send the entire product.
3. Enclose a description of what is happening with the radio. Include a typed or clearly printed name and address of where the radio is to be returned.
4. Pack radio securely to prevent damage in transit. If possible, use the original packing material.
5. Ship prepaid and insured by way of a traceable carrier such as United Parcel Service (UPS) or Priority Mail to avoid loss in transit to: Cobra Factory Service, Cobra Electronics Corporation, 6500 West Cortland Street, Chicago, Illinois 60707 U.S.A.
6. If the radio is in warranty, upon receipt of your radio it will either be repaired or exchanged depending on the model. Please allow approximately three (3) to four (4) weeks before contacting Cobra for status. If the radio is out of warranty, a letter will automatically be sent informing you of the repair charge or replacement charge.

If you have any questions, please call 773-889-3087 for assistance.



Customer Service

English

Flush Mount Template / Plantilla para montaje empotrado

Use the supplied template to mark and cut an opening in the flat surface.

**NOTICE**

Before cutting, be sure the area behind the flat surface is clear of any instruments or wires that might be damaged in the process.

Use la plantilla suministrada para marcar y cortar el agujero en la superficie plana.

**PRECAUCIÓN**

Antes de cortar, compruebe que no haya instrumentos o cables en el área detrás de la superficie plana, que puedan resultar dañados durante el proceso.

